THE JOURNAL

of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 156, NO. 5 CHICAGO, ILLINOIS OCTOBER 2, 1954

UG LIBRARY
College
32865
157
2
19709

COPYRIGHT, 1954, BY AMERICAN MEDICAL ASSOCIATION

RTISONE TREATMENT OF SARCOIDOSIS

EXPERIENCE WITH THIRTY-SIX CASES

Harold L. Israel, M.D., Maurice Sones, M.D.

and

Dick Harrell, M.D., Philadelphia

Sarcoidosis is by no means a benign disease. Chronic disability is common, and blindness as a result of ocular involvement or death from progressive respiratory insufficiency may occur. There is need for a therapeutic agent, but trial of numerous drugs, antibiotics, and other agents was fruitless until the effectiveness of cortisone was shown.[1] Other observers [2] have also reported prompt and marked improvement during treatment with cortisone and adrenocorticotropic hormone. Objective evidence of the activity of these agents has been afforded by striking changes in histological appearance noted in serial biopsy studies [3] as well as by respiratory function studies.[4] However, relapse and even exacerbation have been noted when treatment was discontinued, and some observers have reported frequent activation of tuberculosis.[5]

Our experience with cortisone therapy of sarcoidosis is with 36 patients, who have been observed for as long as 4[illegible] months after treatment. The results have been analyzed in an effort to formulate the indications for use of cortisone in cases of various types of the disease. Special attention has been given to the hazard of tuberculosis as a consequence of cortisone treatment. Finally, the pattern of response to cortisone was studied for possible clues to the nature of sarcoidosis.

SELECTION OF PATIENTS

Our criteria for the diagnosis of sarcoidosis have been previously described.[6] It should be emphasized that the diagnosis cannot be established by clinical, roentgenologic, or histological study alone; the diagnosis of sarcoidosis must be one of exclusion. In the patients included in the present study one or more biopsies showing noncaseating tubercles have been secured, evidence of systemic involvement has been demonstrated, and special effort has been made to exclude by appropriate study tuberculosis, histoplasmosis, and berylliosis. The Kveim test, in our experience, cannot be relied on as an aid in the diagnosis of sarcoidosis.[7]

Those treated (table 1) do not represent a consecutive, unselected series of patients with sarcoidosis. As experience indicated that patients with indolent disease and mild symptoms obtained little benefit from cortisone, the group treated increasingly comprised those with ocular lesions or with progressive respiratory disability. All patients had symptoms except one whose extensive pulmonary infiltration had been detected in a chest roentgenogram survey. In this case, the fact that a survey film taken a year earlier had been normal indicated that the infiltration was recent, and it was considered justifiable to attempt to influence the roentgenologic changes despite the absence of symptoms. Many of the patients were quite ill. Severe respiratory disability led to the treatment of 11 patients. Acute uveitis was the indication for treatment in three patients, and acute parotitis was the indication in an additional three patients. Two patients were critically ill when cortisone therapy was instituted, one with myocardial involvement and the other with renal insufficiency. One patient with hypopituitary cachexia (Simmond's disease) received cortisone initially in the hope of reversing the pituitary changes; the use of cortisone was continued for its physiological action. In an-

---

From the Graduate Hospital and the Henry Phipps Institute of the University of Pennsylvania and the Woman's Medical College of Pennsylvania.

This study was supported by grants from the National Institutes of Health, Department of Health, Education, and Welfare.

1. Sones, M., Israel, H. L.; Dratman, M. B., and Frank, J. H.: Effect of Cortisone in Sarcoidosis, New England J. Med. 244:209, 1951.

2. (*a*) Michael, M., Jr.: Symposium on Cortisone and ACTH Treatment of Sarcoidosis with Cortisone, Tr. Nat. Tuberc. A. 47:65, 1951. (*b*) Siltzbach, L. E.: Effects of Cortisone in Sarcoidosis: A Study of Thirteen Patients, Am. J. Med. 12:139, 1952. (*c*) Carstensen, B., and [illegible], L.: ACTH and Cortison vid Sarcoidosis, Upsala läkaref. förh. 56:197, 1952. (*d*) Shulman, L. E.; Schoenrich, E. H., and Harvey, A. M.: The Effects of Adrenocorticotropic Hormone (ACTH) and Cortisone on Sarcoidosis, Bull. Johns Hopkins Hosp. 91:371, 1952.

3. (*a*) Sones and others.[1] (*b*) Siltzbach.[2b] (*c*) McClement, J. H.; Renzetti, A. D.; Himmelstein, A., and Cournand, A.: Cardiopulmonary Function in the Pulmonary Form of Boeck's Sarcoid and Its Modification by Cortisone Therapy, Am. Rev. Tuberc. 67:154, 1953.

4. McClement and others.[3c] Riley, R. L.; Riley, M. C., and Hill, H. M.: Diffuse Pulmonary Sarcoidosis: Diffusing Capacity During Exercise and Other Lung Function Studies in Relation to ACTH Therapy, Bull. Johns Hopkins Hosp. 91:345, 1952.

5. Lovelock, F. J., and Stone, D. J.: The Therapy of Sarcoidosis, Am. J. Med. 15:477, 1953.

6. Israel, H. L.; Sones, M.; Stein, S. C., and Aronson, J. D.: BCG Vaccination in Sarcoidosis, Am. Rev. Tuberc. 62:408, 1950.

other patient the indication for treatment was severe skeletal involvement simulating advanced rheumatoid arthritis. One patient with a laryngeal granuloma was subjected to exhaustive study to exclude the diagnosis of histoplasmosis before the diagnosis of sarcoidosis was accepted and cortisone was used. Two patients with cutaneous lesions on the face were treated in the absence of systemic symptoms. The remaining patients included those with symptoms of weight loss, malaise, cough, or dyspnea, often with chronic ocular and cutaneous disease.

The patients ranged in age from 20 to 52 years, with the majority of them in the third and fourth decades of life. Thirty of the patients in the series were Negro and six were white. One of the latter group was born in France and the other five in the northeastern states. In the nonwhite group, 23 were born in the southeastern states and 7 were born in the North.

Roentgenographic Findings.—The chest roentgenogram changes prior to treatment were classified according to the presence of mediastinal hilar adenopathy and according to the type of pulmonary lesions. It is recognized that lymph node involvement may be masked by the extensive pulmonary infiltration observed in advanced cases. Well-defined lymph node enlargement was demonstrable in 20 patients; in 12 instances it was accompanied by parenchymal changes. The pulmonary infiltration was classified according to roentgenologic appearance as miliary, representing close-set but discrete nodular lesions; pneumonic, usually patchy areas of soft density resembling diffuse bronchopneumonia; and fibrotic, in which the predominant features appeared to be sharply defined strands or nodules. Miliary lesions were encountered in six patients; in three instances the lesions were accompanied by lymphadenopathy. Lesions classified as pneumonic were observed in 13 patients; in eight instances they were associated with mediastinal nodes. Disease that appeared predominantly fibrotic was noted in seven patients; one of these had discernible hilar adenopathy.

TABLE 1.—*Patients with Sarcoidosis Treated with Cortisone*

Patient	Age	Sex	Race	Principal Manifestations	Duration of Symptoms, *Months*	*Tuberculin Reaction*	Total Dose, *Gm.*	Observation After Treatment, Months
1	43	F	N	Respiratory	60	3+/0.005 mg. PPD	3.0	59
2	52	F	W	Hepatosplenomegaly	8	3+/0.005 mg PPD	2.3	42
3	36	M	W	Respiratory	12	Negative	4.8	19
4	24	M	N	Respiratory	3	Negative	1.0	5
5	25	M	N	Respiratory	81	Negative	36.0	12*
6	22	M	W	Asymptomatic	..	Negative	3.0	22
7	40	F	N	Ocular	120	Negative	2.5	12
8	42	F	N	Respiratory	1	Negative	3.0	30
9	[illegible]	M	[illegible]	Laryngeal	36	Negative	2.0	36
10	25	F	N	*Erythema nodosum, parotitis*	1	*Negative*	2.6	22
11	47	F	N	Cutaneous, skeletal	144	1+/0.00002 mg. PPD	3.5	17
12	29	F	N	Hypopituitary *cachexia*	9	3+/0.005 mg. PPD	25.0	31
13	37	M	N	Renal	4	2+/0.005 mg. PPD	3.0	41
14	23	M	N	Ocular	6	Negative	2.1	1
15	28	M	W	Respiratory	5	2+/0.005 mg. PPD	4.5	33
16	36	M	N	Ocular	2	Negative	5.8	3
17	22	M	N	Myocardial	4	Negative	4.5	8
18	24	F	N	*Respiratory*	48	*3+/0.005 mg. PPD*	11.0	5
19	22	M	N	Respiratory	15	Negative	4.3	3
20	39	F	N	Respiratory	9	1+/0.005 mg. PPD	3.0	18*
21	23	M	N	Ocular	4	Negative	2.8	17
22	20	F	N	*Parotitis*	3	Negative	1.5	46
23	30	F	N	Skeletal	96	3+/0.005 mg. PPD	3.0	30
24	32	F	W	Erythema nodosum, ocular	9	Negative	2.0	9
25	28	F	N	Respiratory, ocular	48	Negative	3.0	12*
26	28	F	N	Respiratory	72	2+/0.005 mg. PPD	12.3	24*
27	23	M	N	Ocular	3	1+/0.005 mg. PPD	2.0	15
28	33	M	W	Respiratory	16	Negative	6.0	30
29	30	M	N	*Adenopathy*	2	Negative	8.0	21
30	32	F	N	Cutaneous	6	Negative	3.6	21
31	31	F	N	Respiratory	4	Negative	12.0	29
32	26	M	N	Respiratory	4	Negative	12.6	23
33	45	M	N	Respiratory	6	Negative	4.5	9
34	32	M	N	Cutaneous	6	Negative	3.5	9
35	50	F	N	Cutaneous	18	Negative	3.5	31
36	21	F	N	Respiratory	5	*2+/0.00002 mg. PPD*	*1.8*	24

* = patient died.

TREATMENT

Treatment was initiated in all but five instances in the Graduate or Woman's Medical College hospitals; four patients were treated under our direct supervision at other hospitals, and one patient was treated as an outpatient. Cortisone was used intramuscularly in the first four patients; the remainder received oral medication. Most patients received 200 mg. daily for the first 10 days. The treatment thereafter was given on an outpatient basis. Eleven patients had their dosage rapidly reduced and discontinued. Nineteen patients with chronic disease were treated with gradually diminishing doses over periods of one to four months; they had total doses of 3 to 10 gm. Five patients with severe respiratory disability could not tolerate elimination of cortisone therapy and have remained under treatment for one to two years.

Adrenocorticotropic hormone was used for the treatment of two patients in 1950. The second patient, who had advanced pulmonary changes, died during treatment as a result of cor pulmonale. We have since confined our study, as in the present series of 36 patients, to the use of cortisone.

Results of treatment were assessed according to roentgenologic and clinical criteria and, in a few instances, by respiratory function studies. Special effort was expended in securing serial films of comparable technique, since technical differences in films were often noted to be responsible for apparent changes. Roentgenologic and clinical evaluations of the effects of cortisone treatment were made (1) to ascertain the maximum therapeutic effect during the administration of cortisone and (2) to estimate the status of the patient at the end of the interval of observation after treatment.

The first patients were treated in May, 1950. The period of observations extends, therefore, to almost four years. The interval of observation was short in patients treated in 1953 and in a few patients who disappeared from observation shortly after treatment. For the most part, however, cooperation was good; the mean period of observation was 20 months, and the median was 19 months.

RESULTS OF TREATMENT

Symptomatic Response During Therapy.—Clinical improvement ranging from slight to dramatic was seen in 34 of the 35 patients with symptoms during the course of treatment. Sexual and racial differences in response to therapy were slight. Improvement was somewhat more frequent and marked in patients whose illness was of brief duration. Thus, marked improvement occurred in 61% of patients with symptoms of less than six months' duration, while a similar degree of improvement occurred in only 29% of patients with symptoms of more than six months' duration. It should be noted that the duration of sarcoidosis cannot be accurately estimated from the history. One patient had had a scalenectomy in 1941, at which time an incidental cervical lymph node removed for biopsy showed sarcoidosis (case 2). The patient was well thereafter until 1949, when cough, fatigue, and weight loss developed. Eight months later a study showed pulmonary infiltration and hepatosplenomegaly; a liver biopsy showed sarcoidosis.

The most dramatic response observed was that in three patients with parotitis and fever. In each case the parotid enlargement disappeared in the first 24 hours of therapy and was followed shortly by a decline in fever. The response of patients with acute uveitis was almost equally prompt and striking. Improvement in cough, dyspnea, cutaneous lesions, and hepatosplenomegaly was more gradual but was usually well marked by the end of 7 to 10 days of treatment.

Termination of cortisone therapy was carried out gradually. In most cases the symptomatic improvement was maintained through the period of decreasing dosage. In three patients, manifestations returned two to three weeks after discontinuation of drug treatment, but after a second less intense but more prolonged course of treatment the improvement was maintained. Some patients with severe respiratory symptoms who secured benefit from the cortisone experienced difficulty as the dosage was reduced prior to discontinuation. In five such patients it was necessary to continue therapy for prolonged intervals to maintain symptomatic relief. Two of these patients died of respiratory insufficiency after 12 and 24 months, respectively, of cortisone therapy. In both cases, benefit appeared to be afforded by cortisone until a few weeks before death.

The influence of cortisone on impaired respiratory function was studied in four patients through the kindness of Drs. Hurley L. Motley and Julius H. Comroe. In each instance there was impairment of maximum breathing capacity with significant improvement during cortisone treatment. One patient was anoxemic; a rise to normal saturation occurred during treatment.

Roentgenologic Changes During Therapy.—Roentgenologic improvement did not parallel the clinical improvement observed while cortisone was administered. Complete clearing of pulmonary lesions occurred in three patients with astonishing rapidity. However, one patient relapsed after cortisone therapy was ended and required a second course before securing maintained clearing. Marked improvement was noted in the parenchymal lesions of other patients, but in many patients the improvement was minimal. Progression of disease was observed only in one case, in which there occurred further enlargement of mediastinal lymph nodes.

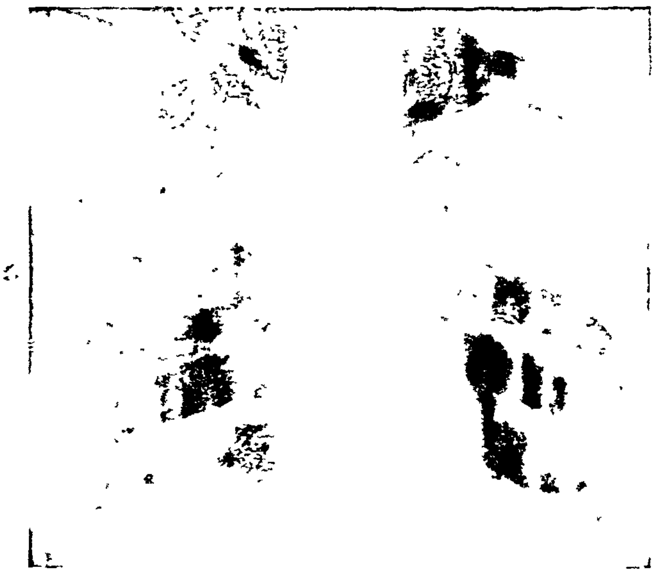


Fig 1.—Chest roentgenogram of the patient in case 8, taken Dec. 12, 1951, showing diffuse pneumonic changes.

The parenchymal changes were more responsive to cortisone than the lymph node lesions. In eight patients there was no diminution in the mediastinal adenopathy, although at the same time ocular, parotid, and cutaneous lesions improved dramatically. Similarly, in some patients with combined mediastinal and pulmonary disease, striking clearing of the pulmonary lesions was noted while the lymph node enlargement regressed gradually over an interval of many months. The presence or absence of adenopathy did not appear to influence the effect other patient the indication for treatment was severe skeletal involvement simulating advanced rheumatoid arthritis. One patient with a laryngeal granuloma was subjected to exhaustive study to exclude the diagnosis of histoplasmosis before the diagnosis of sarcoidosis was accepted and cortisone was used. Two patients with cutaneous lesions on the face were treated in the absence of systemic symptoms. The remaining patients included those with symptoms of weight loss, malaise, cough, or dyspnea, often with chronic ocular and cutaneous disease.

The patients ranged in age from 20 to 52 years, with the majority of them in the third and fourth decades of life. Thirty of the patients in the series were Negro and six were white. One of the latter group was born in France and the other five in the northeastern states. In the nonwhite group, 23 were born in the southeastern states and 7 were born in the North.

Roentgenographic Findings.—The chest roentgenogram changes prior to treatment were classified according to the presence of mediastinal hilar adenopathy and according to the type of pulmonary lesions. It is recognized that lymph node involvement may be masked by the extensive pulmonary infiltration observed in advanced cases. Well-defined lymph node enlargement was demonstrable in 20 patients; in 12 instances it was accompanied by parenchymal changes. The pulmonary infiltration was classified according to roentgenologic appearance as miliary, representing close-set but discrete nodular lesions; pneumonic, usually patchy areas of soft density resembling diffuse bronchopneumonia; and fibrotic, in which the predominant features appeared to be sharply defined strands or nodules. Miliary lesions were encountered in six patients; in three instances the lesions were accompanied by lymphadenopathy. Lesions classified as pneumonic were observed in 13 patients; in eight instances they were associated with mediastinal nodes. Disease that appeared predominantly fibrotic was noted in seven patients; one of these had discernible hilar adenopathy.

TABLE 1.—*Patients with Sarcoidosis Treated with Cortisone*

Patient	Age	Sex	Race	Principal Manifestations	Duration of Symptoms, Months	Tuberculin Reaction	Total Dose, Gm.	Observation After Treatment, Months
1	43	F	N	Respiratory	60	3+/0.005 mg. PPD	3.0	59
2	52	F	W	Hepatosplenomegaly	8	3+/0.005 mg PPD	2.3	42
3	36	M	W	Respiratory	12	Negative	4.8	19
4	24	M	N	Respiratory	3	Negative	1.0	5
5	25	M	N	Respiratory	84	Negative	36.0	12*
6	22	M	W	Asymptomatic	..	Negative	3.0	22
7	40	F	N	Ocular	120	Negative	2.5	12
8	[illegible]	F	N	Respiratory	1	Negative	3.0	30
9	[illegible]	M	N	Laryngeal	36	Negative	2.0	36
10	25	F	N	Erythema nodosum, parotitis	1	Negative	2.6	22
11	47	F	N	Cutaneous, skeletal	144	1+/0.00002 mg. PPD	3.5	17
12	29	F	N	Hypopituitary cachexia	9	3+/0.005 mg. PPD	25.0	31
13	37	M	N	Renal	4	2+/0.005 mg. PPD	3.0	41
14	23	M	N	Ocular	6	Negative	2.1	1
15	28	M	W	Respiratory	5	2+/0.005 mg. PPD	4.5	33
16	36	M	N	Ocular	2	Negative	5.8	3
17	22	M	N	Myocardial	4	Negative	4.5	8
18	24	F	N	Respiratory	48	3+/0.005 mg. PPD	11.0	5
19	22	M	N	Respiratory	15	Negative	4.2	3
20	39	F	N	Respiratory	9	1+/0.005 mg. PPD	3.0	18*
21	23	M	N	Ocular	4	Negative	2.8	17
22	20	F	N	Parotitis	3	Negative	1.5	46
23	30	F	N	Skeletal	96	3+/0.005 mg. PPD	3.0	30
24	32	F	W	Erythema nodosum, ocular	9	Negative	2.0	9
25	28	F	N	Respiratory, ocular	48	Negative	3.0	12*
26	28	F	N	Respiratory	72	2+/0.005 mg. PPD	12.3	24*
27	23	M	N	Ocular	3	1+/0.005 mg. PPD	2.0	15
28	33	M	W	Respiratory	16	Negative	6.0	30
29	30	M	N	Adenopathy	2	Negative	8.0	21
30	32	F	N	Cutaneous	6	Negative	3.6	21
31	31	F	N	Respiratory	4	Negative	12.0	29
32	26	M	N	Respiratory	4	Negative	12.6	23
33	45	M	N	Respiratory	6	Negative	4.5	9
34	32	M	N	Cutaneous	6	Negative	3.5	9
35	50	F	N	Cutaneous	18	Negative	3.5	31
36	21	F	N	Respiratory	5	2+/0.00002 mg. PPD	1.8	24

* = patient died.

TREATMENT

Treatment was initiated in all but five instances in the Graduate or Woman's Medical College hospitals; four patients were treated under our direct supervision at other hospitals, and one patient was treated as an outpatient. Cortisone was used intramuscularly in the first four patients; the remainder received oral medication. Most patients received 200 mg. daily for the first 10 days. The treatment thereafter was given on an outpatient basis. Eleven patients had their dosage rapidly reduced and discontinued. Nineteen patients with chronic disease were treated with gradually diminishing doses over periods of one to four months; they had total doses of 3 to 10 gm. Five patients with severe respiratory disability could

Post-Treatment Evaluation.—A combined clinical and roentgenologic judgment on the course of the disease was made at the time of the last examination of each patient. Clinical recovery with complete clearing of chest roentgenographic changes occurred in three patients. Definite roentgenographic improvement with marked clinical amelioration was observed in 17 patients. The disease was not significantly influenced in 12 patients, and it proved fatal in 4 additional patients.

These findings have been compared with observations tabulated in 1951 on the course of the disease in untreated patients (table 2). The 39 patients who had at that time been observed for periods ranging to four years do not represent matched controls; actually they had less severe, frequently asymptomatic cases of sarcoidosis, since they were an unselected sample. Those selected for cortisone therapy, it should be noted again, with one exception had symptoms and were frequently quite ill. The higher mortality rate in those treated presumably reflects the greater proportion of advanced cases in this group, rather than the fact that the patients were given cortisone; however, it shows that cortisone therapy is not sufficient to avert death in the severe forms of this disease. Similarly, the greater frequency of complete roentgenologic clearing in untreated patients presumably reflects the higher proportion of mild or benign cases in this group.

The higher proportion of treated patients who were improved at the end of the period of observation, 55% as compared to 46% of the untreated group, is impressive when it is considered that the treated group consisted largely of ill patients with advanced lesions while the untreated group represented a random distribution of patients with sarcoidosis, many with minimal and benign disease.

Undesirable Effects of Cortisone Therapy.—It is a significant observation that tuberculosis has not developed in any of the treated patients (table 2). Toxic reactions from cortisone were not a major problem except in a patient in whom a severe psychotic reaction developed after the use of the drug was discontinued. Shock therapy was required in treatment of this episode. In no case was it necessary to discontinue the use of cortisone because of undesirable side-effects, although frequently minor reductions in dosage were required because of fluid retention.

Another untoward effect of cortisone treatment in sarcoidosis has been described by Stone[8] and by Sullivan and his associates.[9] A spread or exacerbation of disease after cessation of therapy has been designated "rebound relapse." In our experience the "rebound" phenomenon has not been important. Clinical and roentgenologic relapse occurred in a number of patients after discontinuation of therapy, but a second course of treatment resulted in sustained improvement. In several patients with advanced respiratory insufficiency, a prompt return of symptoms occurred on reduction of dosage and necessitated indefinite continuation of therapy.

COMMENT

Cortisone has in our experience exerted a consistently favorable symptomatic effect in sarcoidosis. Improvement in roentgenologically demonstrable pulmonary lesions was inconstant, and mediastinal adenopathy was not at all affected. The favorable effect, both clinical and roentgenologic, was transient in some instances and was maintained in others. Improvement was constant and often dramatic in certain extrapulmonary manifestations of sarcoidosis, notably the ocular and the parotid lesions.

The long-term effect of cortisone was less impressive, suggesting that in many cases, despite prompt symptomatic improvement, the course of the disease has not been altered. This is certainly true of many benign cases that go on to complete clearing, with or without therapy, and it is clearly true in the minority with inexorably fatal disease. There appear to be, however, a number of cases of intermediate severity in which the course is altered from a progressive to a retrogressive one by use of cortisone.

It appears, moreover, that a favorable outcome is achieved more rapidly with use of cortisone; and it would be reasonable on these grounds alone to recommend use of cortisone in all cases of sarcoidosis if this form of treatment were free of hazard and if the diagnosis of sarcoidosis could be established precisely. Unfortunately, cortisone is not an innocuous drug, and sarcoidosis may not infrequently be simulated by tuberculosis or mycotic infections in which the use of cortisone is dangerous.

A constant concern when cortisone is employed in the treatment of sarcoidosis is the development of tuberculosis. It will be noted in table 2 that in none of the patients treated by us is tuberculosis known to have developed, nor was tuberculosis recognized in patients treated by Siltzbach[2b] and Shulman and his associates.[2d] We have been informed, however, of numerous instances in which patients have been given cortisone on the basis of a diagnosis of sarcoidosis only to have tuberculosis make an explosive appearance subsequently. Lovelock and Stone[8] noted the development of tuberculosis in 3 of 11 patients with sarcoidosis given cortisone. It is evident from their protocols however, that the tuberculosis in all three instances became manifest within a few weeks of the start of treatment. Clearly, these cases represented in-

TABLE 2.—*Effect of Cortisone Treatment on Course of Sarcoidosis*

	Patients	Period of Observation	Complete Clearing	Definite Improvement	No Improvement	Tuberculosis Developed	Patient Died
Untreated .	39	1946-1950	6	12	18	0	3
Treated ..	36	1950-1954	3	17	12	0	4

---

[8] Stone, D J, Schwartz A, Feltman, J A, and Lovelock, F. J: Pulmonary Function in Sarcoidosis Results with Cortisone Therapy, Am J Med 15:468 1953

[9] Sullivan, R D Mayock, R L., Jones, R, Jr, and Beerman, H: Local Injection of Hydrocortisone and Cortisone into Skin Lesions of Sarcoidosis, J A M A 152:308 (May 23) 1953

stances of tuberculosis simulating sarcoidosis and demonstrate the unhappy effect of cortisone administration in tuberculosis.

The tuberculin test is helpful although admittedly not infallible in distinguishing tuberculosis from sarcoidosis. We have had relatively little concern about tuberculosis in patients with typical sarcoidosis who had negative tuberculin tests or who reacted only to second strength tuberculin. A reaction to first strength tuberculin does not exclude sarcoidosis, since it is obtained in 5% of patients with sarcoidosis. Special caution should be exercised in use of cortisone for patients reacting to first strength tuberculin. Only two of the patients we have treated fell in this category. In one of these patients, although a peripheral lymph node had shown typical noncaseating tubercles, it seemed advisable to check doubly by performing an intercostal pulmonary biopsy. The presence of noncaseating tubercles in the lung justified, in our opinion, the use of cortisone, which resulted in marked symptomatic and roentgenologic improvement.

The hazards of cortisone therapy are not confined to tuberculosis; a similar effect obtains in fungal infections. We recently observed a patient who, given cortisone without benefit of biopsy because a negative tuberculin test and hyperglobulinemia led to a suspicion of sarcoidosis, proved to have blastomycosis. This infection was markedly aggravated by use of cortisone.

Accordingly it seems judicious to restrict the use of cortisone to selected cases of sarcoidosis. Although in our experience the danger of tuberculosis is small, it is evident from the experience of others that this danger cannot be disregarded. In patients who are disabled by respiratory insufficiency or whose vision is threatened ocular involvement it appears justifiable to take this ll risk. Cortisone should not be used in the asympto- ic patient, with the possible exception of apparently ew cases, in which a two week trial of treatment may be justified. Fortunately the indications for use of cortisone are strongest in those forms of sarcoidosis in which there is least danger of confusion with tuberculosis. Patients with acute uveitis, parotitis, severe cutaneous lesions, hepatosplenomegaly, myocardial involvement, or respiratory or renal insufficiency are most in need of steroid therapy and are most likely to benefit by its administration. Such lesions are very rarely caused by tuberculosis, so that patients with weakly positive or negative tuberculin tests, hyperglobulinemia, biopsy specimens demonstrating nocaseating tubercles, and involvement of eyes, parotid glands, skin, heart, liver, or spleen may be given cortisone with confidence. On the other hand, exhaustive bacteriological and mycological study is required before administering cortisone to patients with strongly positive tuberculin reactions, evidence of oral and laryngeal ulcers, serosal lesions, adrenal insufficiency, draining sinuses, or other manifestations rare in sarcoidosis.

The cause of sarcoidosis is unknown; even its character is an enigma. Regarded as an infection by most investigators, efforts to demonstrate a bacterial, viral, or mycotic cause have not been rewarding.[10] The similarity of berylliosis has suggested a chemical cause, and attention has been drawn to the resemblance to the collagen disorders.[11] Certain inferences may be drawn from the response of sarcoidosis to cortisone. The failure of tuberculosis to become manifest in the patients we have treated is weighty evidence against the role of tubercle bacilli in this disease. The failure to observe febrile relapse during or after cortisone therapy in our patients seems to us impressive evidence against other infections, bacterial or fungal, as a cause of sarcoidosis.

Although sarcoidosis exhibits certain similarities to the collagen disorders, the response to cortisone differs considerably from the pattern observed in this group of diseases. In disseminated lupus erythematosus, for example, much larger doses of cortisone are usually required for control of symptoms, and the recurrence rate is extremely high. It is noteworthy that no instances of late relapse have been observed in this series. The deaths have been confined to the small group of patients with extremely advanced disease who could not tolerate discontinuation of therapy. Patients who obtained definite clinical and roentgenologic improvement and had cortisone withdrawn after an interval of several months have invariably maintained their improvement without recurrence.

SUMMARY AND CONCLUSIONS

In 36 patients with sarcoidosis treated with cortisone and observed subsequently for intervals as long as four years, symptomatic improvement, often marked, was noted in all except one instance and was maintained in many cases after the cessation of therapy. Benefit was most striking in patients with extrapulmonary manifestations, ocular, parotid, cutaneous, or myocardial, and was most marked in patients with symptoms of brief duration. Improvement in chest roentgenograms during cortisone therapy was less frequently observed. No significant effect on mediastinal lymphadenopathy was noted. Definite improvement occurred in 50% of patients with pulmonary infiltration; in a few instances complete resolution was effected.

Prolonged observation indicated that the course of the disease was favorably influenced in only a minority of cases. No instances of tuberculosis were encountered; four patients died of progressive sarcoidosis. A trial of treatment with cortisone is indicated for patients with ocular lesions, increasing roentgenologic changes, or debilitating symptoms. It is concluded that cortisone therapy may safely be given in instances in which a diagnosis of sarcoidosis is supported by careful studies. The pattern of response to cortisone exhibited by patients with sarcoidosis is not characteristic of infections or of the collagen disorders.

255 S. 17th St. (3) (Dr. Israel).

---

[10] Rostenberg, A., Jr.: Etiologic and Immunologic Concepts Regarding Sarcoidosis, A. M. A. Arch. Dermat. & Syph 64: 385 (Oct.) 1951. Israel, H. L., and others: Chronic Disseminated Histoplasmosis: Investigation of Its Relationship to Sarcoidosis, Am. J. Med. 12: 252, 1952.

[11] Jackson, A., and Kass, I.: The Relationship Between Periarteritis Nodosa and Sarcoidosis, Ann. Int. Med. 38: 288, 1953.

VERTEBRAL FRACTURES RESULTING FROM PROLONGED CORTISONE AND CORTICOTROPIN THERAPY

Paul H. Curtiss Jr., M.D., William S. Clark, M.D.
and
Charles H. Herndon, M.D., Cleveland

During the past year the authors have observed four male patients with rheumatoid arthritis in whom severe compression fractures of the vertebrae have developed during the administration of cortisone or corticotropin or both. Although demineralization of the skeleton is a recognized complication of cortisone therapy, these cases have prompted the authors to emphasize the importance of possible pathological fractures when prolonged treatment of this nature is used.

Demartini, Grokoest, and Ragan,[1] in 1952, reported pathological fractures in five patients who had received intensive cortisone therapy. As these authors pointed out, however, other factors predisposing to osteoporosis were present in that all five patients were women (four had passed the menopause) and three had severe rheumatoid arthritis. In the same year Teicher and Nelson [2] reported the case of a young woman with pemphigus vulgaris who was treated for three years with cortisone, during which time pathological compression fractures from the ninth thoracic to the fifth lumbar vertebra were demonstrated, and Soffer and Bader [3] reported compression fractures of the 12th thoracic and 1st lumbar vertebra in a 58-year-old woman with lupus erythematosus disseminata treated with cortisone. Five other cases of pathological fractures occurring in patients during cortisone or corticotropin therapy were reported in 1953.[4]

The four patients whose cases are presented in this report were all male, and although the osteoporosis of chronic rheumatoid arthritis might have contributed to their condition we believe that prolonged cortisone therapy was of primary importance in the production of the pathological fractures.

REPORT OF CASES

Case 1.—A 57-year-old white man was first admitted to University Hospitals in April, 1951. In February, 1951, pain in both shoulders had developed. This was followed by fever and swelling, redness, and tenderness of the fingers, knees, ankles, and elbows. Examination showed a temperature of 100.4 F, a fixed rib cage, spindle-shaped fingers, swelling of the metacarpophalangeal joints; ulnar deviation of the fingers, and limitation of motion, swelling, and tenderness of the shoulders and knees. On the sixth hospital day cortisone therapy was started with dramatic relief of symptoms, and on April 25, 1951, the patient was discharged. He was receiving 50 to 100 mg. of cortisone daily. Six months later an attempt to withdraw cortisone resulted in a prompt rise in temperature to 103.2 F. The temperature returned to normal when corticotropin was administered. The patient was discharged and given 40 units of corticotropin (Acthar) gel daily. When the patient was readmitted in May, 1953, examination showed obvious hypercortisonism with a "moon face," "buffalo hump," and hemorrhagic phenomena of the skin. X-ray examination of the lumbosacral spine in May, 1951, showed extensive demineralization (fig. 1). Despite continued corticotropin therapy, joint symptoms had persisted. The patient's fourth admission in September, 1953, was for the complaints of ankle edema, dyspnea, and back pain, the last having been present for three weeks prior to admission. X-ray examination of the spine showed partial collapse of the 10th, 11th, and 12th thoracic vertebrae and the 4th and 5th lumbar vertebrae. There was marked demineralization with anterior wedging and biconcavity of most of the vertebrae. Laboratory studies on the fourth admission showed no abnormalities in the urine, a white blood cell count of 9,200 per cubic millimeter, and a hemoglobin level of 13 gm. per 100 cc. The serum protein level was 5.2 gm. per 100 cc. with 3.5 gm. of albumin and 1.4 gm. of globulin. The serum calcium level was 10.9 mg. per 100 cc.; phosphorus, 3.9 mg. per 100 cc.; alkaline phosphatase, 6.2 Bodansky units; and acid phosphatase, zero.

Case 2.—A 67-year-old white man was admitted to the University Hospitals on May 28, 1953. Symptoms of rheumatoid arthritis had developed in the patient in 1943 with progressive involvement of almost all peripheral joints. He had received cortisone for about one year before admission. The dose of cortisone had ranged between 75 and 100 mg. per day, and he had experienced marked subjective improvement. On April 30, 1953, while disassembling a pipe in the basement of his house, he felt a sudden sharp pain in his back. Although the back pain persisted, he continued his usual activities, including a trip to Florida. Enroute to Cleveland his back pain became so severe that he consulted a physician in Philadelphia who, after x-ray examination of the spine, diagnosed a compressed fracture of the 11th thoracic vertebra. The patient returned to Cleveland and was admitted to University Hospitals on May 26, 1953, complaining of pain in the lower thoracic spine. The patient's medical history showed that hypertensive cardiovascular disease had been known to exist since 1952. In 1948, he had been hospitalized for a pulmonary condition manifested by multiple pulmonary lesions, though bronchoscopy was negative and paraffin block examination of pleural effusion fluid showed no malignant cells. Subsequent studies in 1952 showed no progression in the pulmonary findings. On examination the patient appeared chronically ill and showed multiple peripheral joint involvement characteristic of rheumatoid arthritis. Examination of the prostate showed a firm central area in the region of the sulcus. The remainder of the physical examination showed no abnormalities. Roentgenograms of the dorsolumbar portion of the spine confirmed the diagnosis of a compression fracture of the 11th thoracic vertebra and showed extensive, generalized demineralization of the vertebrae (fig. 2). Laboratory studies showed no abnormalities in the urine, a white blood cell count of 7,500 per cubic millimeter, and a hemoglobin level of 14.6 gm. per 100 cc. The total serum protein was 6.1 gm. per 100 cc.; serum albumin, 4 gm. per 100 cc.; serum globulin, 2.1 gm. per 100 cc.; serum calcium, 11.9 mg. per 100 cc.; serum phosphorus, 3.2 mg. per 100 cc.; alkaline phosphatase, 8.9 Bodansky units; and serum acid phosphatase, 0.3 Bodansky units.

From the Department of Orthopedic Surgery and the Department of Medicine, Western Reserve University and the University Hospitals.

These studies were supported in part by the Cleveland Chapter of the Arthritis and Rheumatism Foundation.

1. Demartini, F.; Grokoest, A. W., and Ragan, C.: Pathological Fractures in Patients with Rheumatoid Arthritis Treated with Cortisone, J. A. M. A. **149**: 750-752 (June 21) 1952.

2. Teicher, R., and Nelson, C. T.: Osteoporosis and Pathological Fractures Following Treatment with ACTH and Cortisone, J. Invest. Dermat. **19**: 205-210, 1952.

3. Soffer, L. J., and Bader, R.: Corticotropin and Cortisone in Acute Disseminated Lupus Erythematosus, J. A. M. A. **149**: 1002-1008 (July 12) 1952.

4. de Sèze, S.; Hubalt, A., and Renier, J. C.: Quatre cas de fractures spontanées observées chez des malades traités par la cortisone, Presse Méd. **39**: 819, 1953. Case Records of the Massachusetts General Hospital: Case 39221, New England J. Med. **248**: 945-950, 1953.

VERTEBRAL FRACTURES RESULTING FROM PROLONGED CORTISONE AND CORTICOTROPIN THERAPY

Paul H. Curtiss Jr., M.D., William S. Clark, M.D.
and
Charles H. Herndon, M.D., Cleveland

During the past year the authors have observed four male patients with rheumatoid arthritis in whom severe compression fractures of the vertebrae have developed during the administration of cortisone or corticotropin or both. Although demineralization of the skeleton is a recognized complication of cortisone therapy, these cases have prompted the authors to emphasize the importance of possible pathological fractures when prolonged treatment of this nature is used.

Demartini, Grokoest, and Ragan,[1] in 1952, reported pathological fractures in five patients who had received intensive cortisone therapy. As these authors pointed out, however, other factors predisposing to osteoporosis were present in that all five patients were women (four had passed the menopause) and three had severe rheumatoid arthritis. In the same year Teicher and Nelson [2] reported the case of a young woman with pemphigus vulgaris who was treated for three years with cortisone, during which time pathological compression fractures from the ninth thoracic to the fifth lumbar vertebra were demonstrated, and Soffer and Bader [3] reported compression fractures of the 12th thoracic and 1st lumbar vertebra in a 58-year-old woman with lupus erythematosus disseminata treated with cortisone. Five other cases of pathological fractures occurring in patients during cortisone or corticotropin therapy were reported in 1953.[4]

The four patients whose cases are presented in this report were all male, and although the osteoporosis of chronic rheumatoid arthritis might have contributed to their condition we believe that prolonged cortisone therapy was of primary importance in the production of the pathological fractures.

REPORT OF CASES

CASE 1.—A 57-year-old white man was first admitted to University Hospitals in April, 1951. In February, 1951, pain in both shoulders had developed. This was followed by fever and swelling, redness, and tenderness of the fingers, knees, ankles, and elbows. Examination showed a temperature of 100.4 F, a fixed rib cage, spindle-shaped fingers, swelling of the metacarpophalangeal joints, ulnar deviation of the fingers, and limitation of motion, swelling, and tenderness of the shoulders and knees. On the sixth hospital day cortisone therapy was started with dramatic relief of symptoms, and on April 25, 1951, the patient was discharged. He was receiving 50 to 100 mg. of cortisone daily. Six months later an attempt to withdraw cortisone resulted in a prompt rise in temperature to 103.2 F. The temperature returned to normal when corticotropin was administered. The patient was discharged and given 40 units of corticotropin (Acthar) gel daily. When the patient was readmitted in May, 1953, examination showed obvious hypercortisonism with a "moon face," "buffalo hump," and hemorrhagic phenomena of the skin. X-ray examination of the lumbosacral spine in May, 1951, showed extensive demineralization (fig. 1). Despite continued corticotropin therapy, joint symptoms had persisted. The patient's fourth admission in September, 1953, was for the complaints of ankle edema, dyspnea, and back pain, the last having been present for three weeks prior to admission. X-ray examination of the spine showed partial collapse of the 10th, 11th, and 12th thoracic vertebrae and the 4th and 5th lumbar vertebrae. There was marked demineralization with anterior wedging and biconcavity of most of the vertebrae. Laboratory studies on the fourth admission showed no abnormalities in the urine, a white blood cell count of 9,200 per cubic millimeter, and a hemoglobin level of 13 gm. per 100 cc. The serum protein level was 5.2 gm. per 100 cc. with 3.5 gm. of albumin and 1.4 gm. of globulin. The serum calcium level was 10.9 mg. per 100 cc.; phosphorus, 3.9 mg. per 100 cc.; alkaline phosphatase, 6.2 Bodansky units; and acid phosphatase, zero.

CASE 2.—A 67-year-old white man was admitted to the University Hospitals on May 28, 1953. Symptoms of rheumatoid arthritis had developed in the patient in 1943 with progressive involvement of almost all peripheral joints. He had received cortisone for about one year before admission. The dose of cortisone had ranged between 75 and 100 mg. per day, and he had experienced marked subjective improvement. On April 30, 1953, while disassembling a pipe in the basement of his house, he felt a sudden sharp pain in his back. Although the back pain persisted, he continued his usual activities, including a trip to Florida. Enroute to Cleveland his back pain became so severe that he consulted a physician in Philadelphia who, after x-ray examination of the spine, diagnosed a compressed fracture of the 11th thoracic vertebra. The patient returned to Cleveland and was admitted to University Hospitals on May 26, 1953, complaining of pain in the lower thoracic spine. The patient's medical history showed that hypertensive cardiovascular disease had been known to exist since 1952. In 1948, he had been hospitalized for a pulmonary condition manifested by multiple pulmonary lesions, though bronchoscopy was negative and paraffin block examination of pleural effusion fluid showed no malignant cells. Subsequent studies in 1952 showed no progression in the pulmonary findings. On examination the patient appeared chronically ill and showed multiple peripheral joint involvement characteristic of rheumatoid arthritis. Examination of the prostate showed a firm central area in the region of the sulcus. The remainder of the physical examination showed no abnormalities. Roentgenograms of the dorsolumbar portion of the spine confirmed the diagnosis of a compression fracture of the 11th thoracic vertebra and showed extensive, generalized demineralization of the vertebrae (fig. 2). Laboratory studies showed no abnormalities in the urine, a white blood cell count of 7,500 per cubic millimeter, and a hemoglobin level of 14.6 gm. per 100 cc. The total serum protein was 6.1 gm. per 100 cc.; serum albumin, 4 gm. per 100 cc.; serum globulin, 2.1 gm. per 100 cc.; serum calcium, 11.9 mg. per 100 cc.; serum phosphorus, 3.2 mg. per 100 cc.; alkaline phosphatase, 8.9 Bodansky units; and serum acid phosphatase, 0.3 Bodansky units.

From the Department of Orthopedic Surgery and the Department of Medicine, Western Reserve University and the University Hospitals.

These studies were supported in part by the Cleveland Chapter, Arthritis and Rheumatism Foundation.

1. Demartini, F.; Grokoest, A. W., and Ragan, C.: Patho[illegible] Fractures in Patients with Rheumatoid Arthritis Treated [illegible] J. A. M. A. 149: 750-752 (June 21) 1952.

2. Teicher, R., and Nelson, C. T.: [illegible] Fractures Following Treatment with [illegible] Dermat. 19: 205-210, 1952.

3. Soffer, L. J., and Bader, [illegible] Disseminated Lupus Erythem[illegible] 1952.

4. de Sèze, S.; Hubault, [illegible] spontanées observées [illegible] Méd. 39: 819, 1953. [illegible] Case 39221, New En[illegible]

Case 3.—A 9-year-old white boy had a febrile illness characterized by migrating joint pains in May, 1949. He was treated with bed rest for three months and showed improvement. In December, 1949, persistent pain in the elbows developed, followed by pain and swelling of most peripheral joints, fever, and an elevated sedimentation rate. A diagnosis of multiple rheumatoid arthritis (Still's disease) was made, and the patient received two short courses of cortisone therapy. Cortisone therapy was not continued, but the disease remitted with conservative therapy over an 11 month period. He then remained without symptoms for 13 months, but at the end of this period an exacerbation occurred and continuous cortisone therapy was started (in May, 1952) in doses ranging between 100 and 200 mg. per day. Attempts to later reduce the dose below 100 mg. per day resulted in febrile exacerbations. He was admitted to University Hospitals in August, 1952. For 24 hours prior to admission he had noted pain in the chest and shoulder.

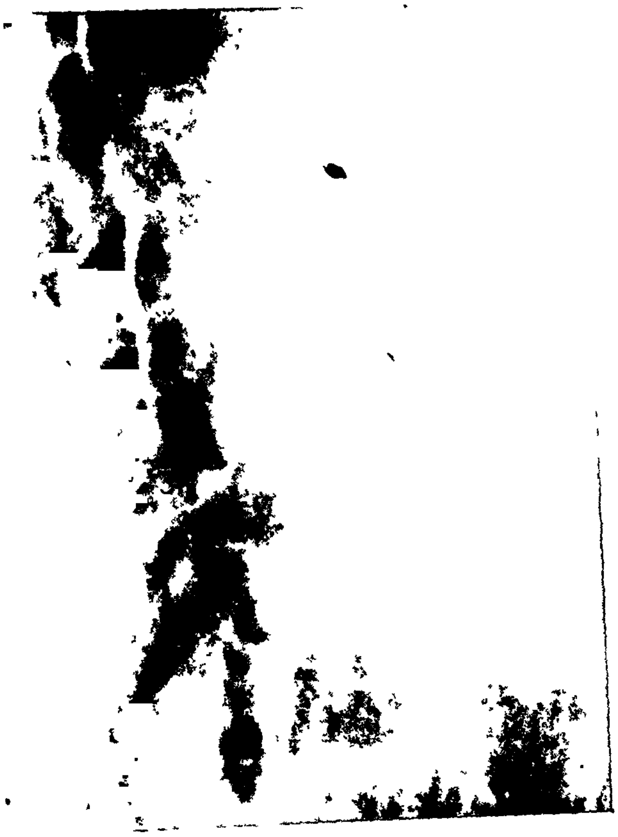


Fig. 1.—Roentgenogram showing lateral view of the patient reported on in case 1. Partial collapse of several vertebrae and marked generalized osteoporosis are seen.

Examination showed a typical "moon face" and "buffalo hump." The cortisone dosage was gradually withdrawn, and corticotropin given intravenously was substituted in a dosage of 15 mg. per day. He was readmitted briefly in February, 1953, for a second course of corticotropin and discharged and given cortisone (100 to 200 mg. per day). He was admitted to Babies' and Children's Hospital on Aug. 29, 1953, with complaints of fever, dyspnea, and abdominal pain. X-ray examination of the spine showed generalized demineralization with multiple compression fractures of vertebral bodies from the seventh thoracic to the fifth lumbar vertebra (fig. 3). (It is of interest to note that the patient was an enthusiastic stamp collector and spent a least an hour a day bending over his collection on a card table.) Laboratory studies showed no abnormalities in the urine, a white blood cell count of 12,000 per cubic millimeter, and a hemoglobin level of 12.2 gm. per 100 cc. The serum phosphorus level was 2.8 mg. per 100 cc., and the alkaline phosphatase level was 7.9 Bodansky units.

Case 4.—A 63-year-old white man was admitted to University Hospitals for the first time on Sept. 1, 1953, with a chief complaint of pain in the low back on motion. In May, 1951, rheumatoid arthritis characterized by periodic, transient episodes of swollen, red, and painful joints had developed. He had been treated with salicylates without symptomatic relief. This had been followed by the administration of cortisone but, since 200 mg. a day was necessary to control his symptoms, this was discontinued after 12 weeks. The symptoms recurred after withdrawal, so that in February, 1953, cortisone was resumed in a smaller dosage of 75 to 100 mg. per day. This dosage was continued until the time of admission, when examination showed the typical peripheral joint involvement of rheumatoid arthritis. There was also slight tenderness to percussion over the lower dorsal spine and slight enlargement of the spleen. Roentgenograms of the spine showed marked demineralization, biconcavity of the vertebral bodies, and compression fractures of the 11th thoracic and 1st lumbar vertebrae. Roentgenograms of the chest showed fractures of the third and fourth ribs with some callus formation. Roentgenograms of the skull showed no demineralization, but there was osteoporosis of the femurs. Laboratory studies showed no abnormalities in the urine, a white blood cell count of 9,900 per cubic millimeter, and a hemoglobin level of 15.7 gm. per 100 cc. The total serum protein level was 7.2 gm. per 100 cc.; albumin, 3.9 gm.; globulin, 3.3 gm.; calcium, 9.5 mg.; phosphorus, 5.6 mg.; alkaline phosphatase, 6.2 Bodansky units; and acid phosphatase, 0.1 Bodansky units.

COMMENT

These cases again illustrate one of the serious hazards of prolonged treatment with cortisone or corticotropin. In all four patients, destructive lesions of bone were reasonably well excluded by clinical methods, and the weight of evidence supports metabolic osteoporosis as the principal cause of the fractures.

The question naturally arises as to the precise role of cortisone or corticotropin in the genesis of such severe demineralization, which is apparently a result of excessive excretory losses of calcium, phosphorus, and nitrogen. These metabolic phenomena are known to be associated not only with the administration of cortisone and corticotropin[5] but also with rheumatoid arthritis[6]

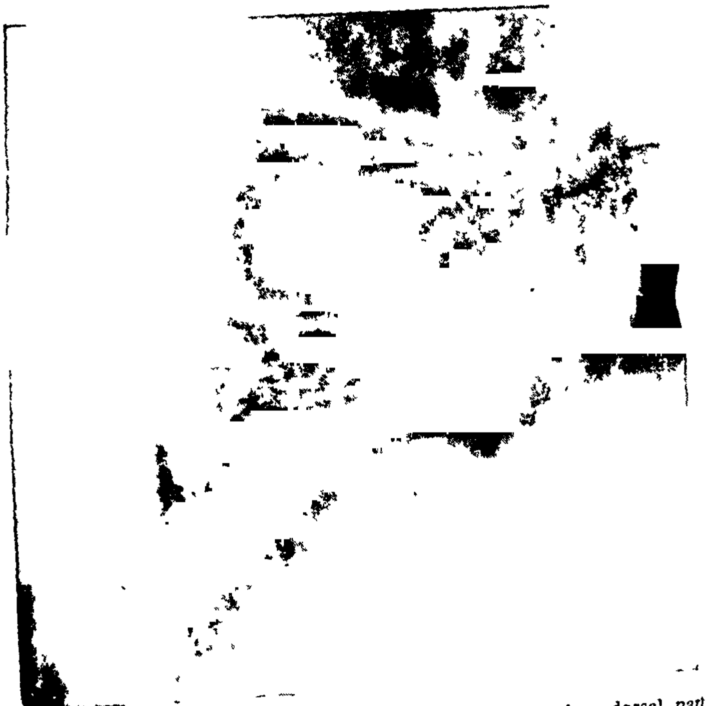


Fig. 2.—Roentgenogram showing lateral view of the low dorsal part of the spine of the patient reported on in case 2. Marked collapse of the 11th dorsal vertebra and generalized osteoporosis are seen.

---

[5] Sprague, R. G., and others: Observations on Physiologic Effects of Cortisone and ACTH in Man, Arch. Int. Med. 85: 199-258 (Feb.) 1950.

[6] (*a*) Ropes, M. W.; Rossmeisl, E. C., and Bauer, W.: Calcium and Phosphorus Metabolism in Rheumatoid Arthritis and Degenerative Joint Disease, J. Clin. Invest. 22: 785-790, 1943. (*b*) Clark, W. S.; Watkins, A. L.; Tonning, H. O., and Bauer, W.: Effects of Resistance Exercises on Nitrogen, Phosphorus, and Calcium Metabolism of Patients with Rheumatoid Arthritis, J. Clin. Invest. 33: 505-509, 1954.

and simple immobilization.[7] Without controlled balance studies, one can only surmise that the administration of the hormone has been a major factor in the cases presented.

Other variables such as age, sex, diet, and hormone dosage can be of influence in the causation of this complication of hormone therapy. Osteoporosis syndromes are more often found in females and in older age groups. Moreover, doses of cortisone necessary to induce negative calcium, phosphorus, and nitrogen balances experimentally have been higher in males.[5] Thus, everything else being equal, it would appear that younger males would be more resistant to these unfavorable effects of cortisone. These four cases illustrate, however, that such an advantage can be lost by administration of higher doses of the hormone. It is not known how effectively diet can prevent the disturbances of nitrogen and mineral balance induced by cortisone.

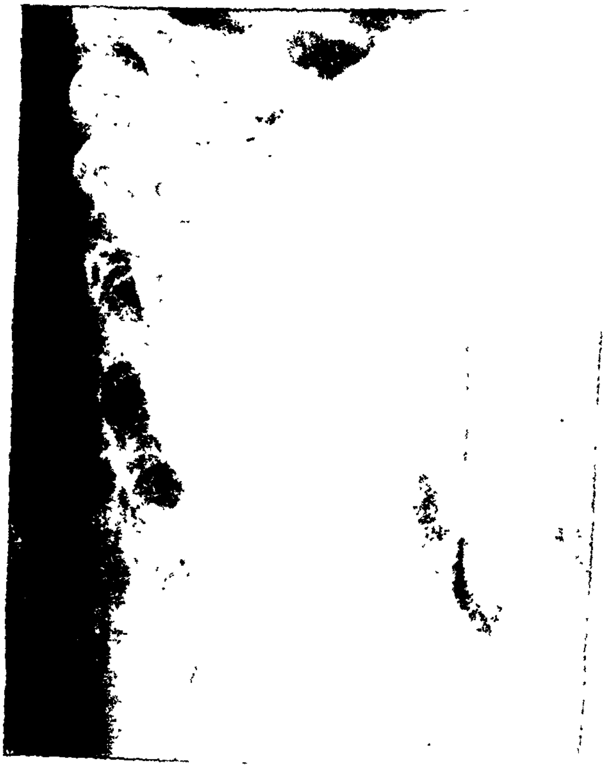


Fig. 3.—Roentgenogram showing lateral view of the dorsolumbar spine of the patient reported on in case 3. Multiple compression lesions of the vertebral bodies with marked osteoporosis are seen.

It has been shown that testosterone favors calcium, phosphorus, and nitrogen retention in adrenal cortical hyperfunction (Cushing's syndrome),[5] in rheumatoid arthritis,[5b] and during administration of cortisone.[5] Estrogens, while having a similar effect in postmenopausal or senile osteoporosis, may not effectively influence the mineral and nitrogen losses induced by cortisone.[5] It has also been shown that physical activity has similar effects on calcium and nitrogen metabolism during the course of rheumatoid arthritis [5b] and immobilization.[7]

These reported observations indicate that [illegible] steoporosis and [illegible] vented by the use of testosterone and physical activity, by limiting the intake of cortisone or corticotropin, and by exercising extreme caution in administering these agents to patients predisposed to osteoporosis, i. e., elderly patients, postmenopausal women, and patients with severe arthritis or markedly restricted by arthritis. Once this complication has occurred, however, cessation of cortisone therapy is indicated because of the uncertainty and relative ineffectiveness of countermeasures available. Proper orthopedic management is, of course, of utmost importance.

SUMMARY

In four male patients receiving prolonged cortisone and corticotropin therapy, multiple pathological fractures of the spine developed. Although other factors predisposing to osteoporosis (chronic rheumatoid arthritis and "disuse atrophy") were present in all four cases, it is the authors' opinion that the prolonged administration of cortisone or corticotropin was of primary importance in the severity of the osteoporosis that led to pathological fracture.

Fig. 4.—Roentgenogram showing lateral view of the [illegible] of the patient reported on in case 4. [illegible] of several vertebrae with compression of the [illegible] first lumbar vertebra are seen.

2065 Adelbert Rd. (6) (Dr. Curtiss).

---

7. [illegible], J. E.; [illegible], G. D. [illegible] Immobilization upon [illegible] Normal Men, Am. J. Med. [illegible] Functions of [illegible]

8. Albright [illegible]

J.A.M.A., Oct. 2, 1954

THE VALUE OF ILLUSTRATION IN MEDICAL WRITING

Russell L. Drake, Rochester, Minn.

Most physicians realize the worth of a good illustration as an aid in describing a technique or a condition; therefore, this presentation may be in the nature of a review, or it may bring out a few new points. It has been said that a picture is worth 10,000 words or a certain number of pages of text. In reality it is worth far more than that, for in many instances description alone, regardless of the number of words used, leaves the reader without a clear impression of what the author is trying to explain. Often, one illustration will be the clincher, the one thing that will put an idea over, whereas without it the reader may be partly or totally confused.

The illustration need not be complicated or elaborate, but it must be good and made by an artist especially trained in medical drawing. Pictures should not be made by someone the author happens to know who can draw. A person may be an excellent artist, but that is not enough; he must be trained in the specialty of medical illustration. This education can be obtained in several schools of medical illustration in this country; one must had thorough training in drawing before entering se schools. Such schools are affiliated with medical schools, and the student of medical illustration takes the same course in anatomy as that given medical students. He is taught the techniques and media that are best suited to medical drawing and the methods used to obtain the best results in publication. He becomes familiar with procedures in the operating room and the appearance of live tissue. Without this special training he is not equipped to make a medical drawing, and any author who has a drawing made by one not so trained almost certainly will regret it.

Often one illustration is all that is needed to clarify an article. No value accrues from padding a paper with drawings. It is important to use illustrations only when definite need for them exists; unnecessary illustrations, aside from being expensive, merely take up the time of the reader, time that is sorely needed in trying to keep ahead of the avalanche of current medical literature. If an author expects his article to be read, it must be presented in the clearest possible manner and in such a way that the reader may grasp the idea in the shortest possible time. This does not mean that all writings require illustrations. When drawings are not called for, they should not be used. If, however, a certain technique is difficult to describe, the value of a suitable illustration should not be overlooked. Many good ideas are lost for want of a suitable drawing.

TYPES OF ILLUSTRATION

Many times a simple diagram is all that is needed; however, when form and texture are important, a more elaborate drawing can be made. The drawing should be made in such a way that attention is called to the most important part, while the remainder of the drawing is subordinate. Just enough of the surrounding anatomic features should be pictured to orient the viewer. Lettering on a drawing draws attention to the important parts, and for this reason, excessive lettering should be avoided. Occasionally, however, as in making an anatomic study, much lettering must be used. The medium used in making the drawing should be considered. Use of pen and ink is excellent for simple diagrams and semidiagrammatic drawings. Tone drawings are usually made when form and texture are important. Color is used occasionally, but only when it is of utmost importance, as reproduction of color greatly increases the costs, and some journals do not use colored illustrations.

Graphic representations are also of definite value. A graph should be kept as simple as possible, since one with a great amount of detail and a complex assortment of curves will defeat its purpose. A graph should give the viewer a certain idea, such as the result of an experiment or a comparison of data. If an attempt is made to show the whole story on one graph it becomes so complicated that most readers will not even look at it. The size and amount of lettering on a graph are of utmost importance. The size of lettering varies with the size of the graph. Lettering should be large enough to show on lantern slides as well as when reduced for publication. Many authors tend to forget that, particularly in lantern slides, there is a definite limitation to the number of words that can be used. If this limit is exceeded, the lettering will not be legible when projected.

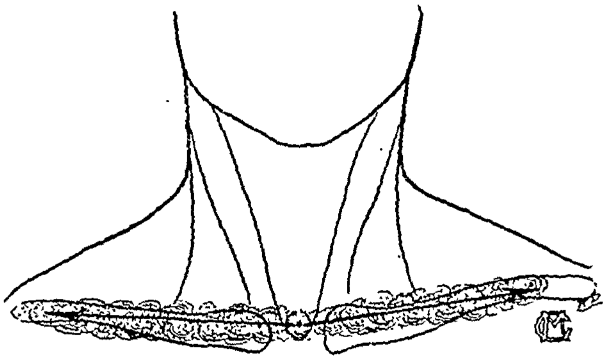


Fig. 1.—Simple outline drawing.

The author and the artist should discuss in consultation the type of drawing to be used; the author describes what he is most interested in showing, and the artist decides what medium will best express it. The artist then makes a preliminary sketch, which he presents to the author. The author should study this preliminary drawing carefully, because the artist would like to make all necessary changes on this sketch, at a stage when changes are easily made. Changes can be made on the final drawing, but they are more difficult at that time and will mar the appearance of the drawing, in addition to adding to expense.

MEDIUMS OF ILLUSTRATION

Some thought should be given to the journal in which a paper is to be published. Pen and ink drawings have

---

Read before the Section on Anesthesiology at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 22, 1954.

From the Art Studio, Mayo Clinic.

the advantage of reproducing well even on inferior grades of paper. Tone drawings require a good grade of paper for satisfactory reproduction and cost somewhat more to reproduce than pen and ink drawings. Some medical journals use a better grade of paper than others, which might be kept in mind when a decision is made on the medium to be used for the drawings.

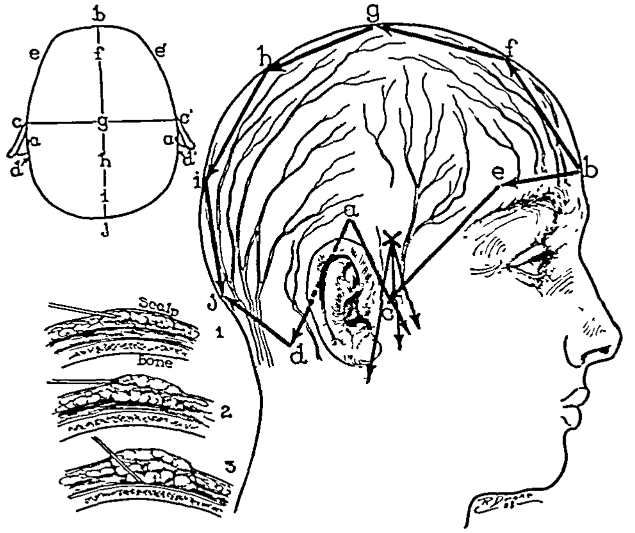


Fig. 2.—Simple pen and ink drawing with a small number of lines added for shading.

Some examples of the different illustrations that have been referred to will indicate their practical application. Figure 1 shows a simple outline drawing. This diagram of the technique of supraclavicular infiltration is the simplest type of drawing. The author's thought can be grasped at a glance; the point of injection and the direction and extent of infiltration are immediately evident. Description of the same technique would take many words and much of the reader's time.

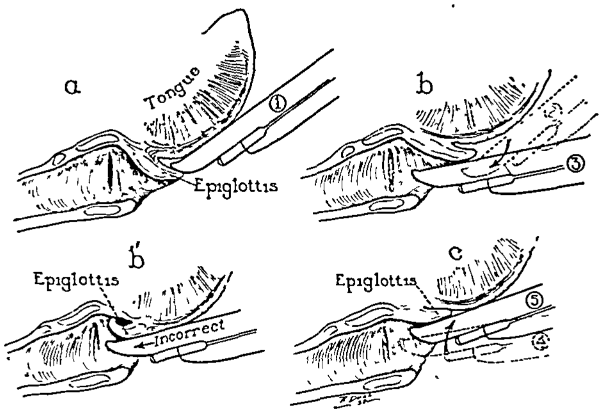


Fig. 3.—An example of a drawing that illustrates procedures that would be difficult to describe with words alone.

A simple pen and ink drawing is seen in figure 2. Here, in addition to outline, lines have been added to give some modeling. Much text would be necessary to describe this scalp block; the advantages of an illustration in such instances as this are obvious.

Figure 3 is a pen and ink drawing illustrating insertion of a laryngoscope. This shows how simply steps in a procedure can be pictured. Numbering the steps guides the reader through the various maneuvers. Arrows indicate direction. It would be difficult to describe this procedure properly without the aid of an illustration. The picture left in the mind of the reader is clear and definite, and the illustration is also valuable as a ready reference.

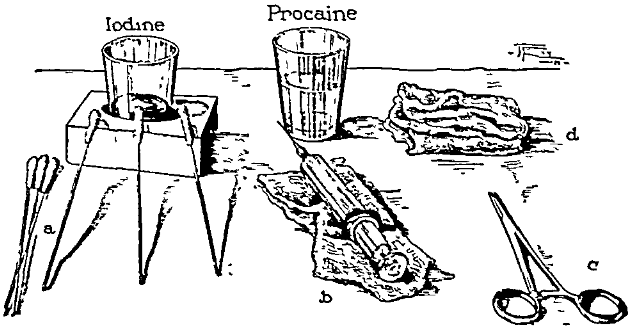


Fig. 4.—When a photograph is not clear, a drawing such as shown above will accent the parts that the author wishes to describe.

Often, photographs will fulfill the need for illustration; however, in some instances, apparatus or the contents of a tray are not entirely distinct in a photograph. A pen and ink drawing made from the photograph or from the original articles often makes a better illustration, as exemplified by the drawing of the contents of a tray used for dental anesthesia (fig. 4). Disturbing highlights and shadows are left out in a drawing, and accent can be placed only on those details that are of importance. The shading can be so placed that it clearly demonstrates what is to be shown.

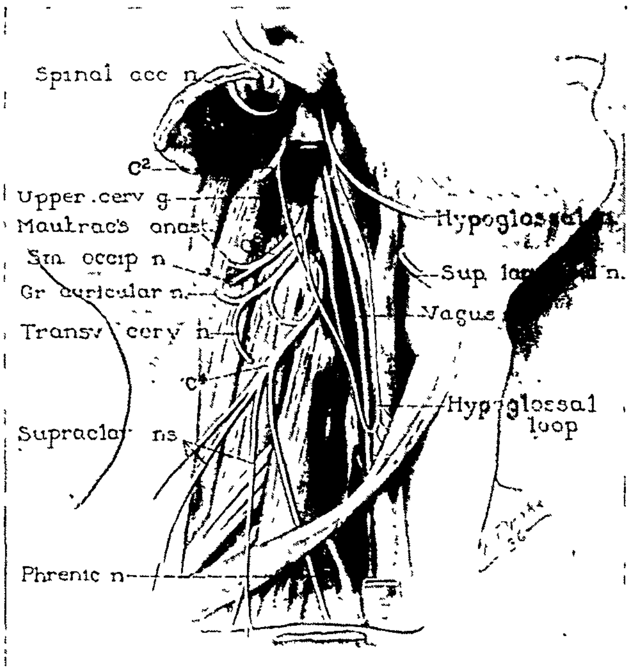


Fig. 5.—Tone drawing, which is used when more realism is desired, or when a line drawing may be confusing.

As already mentioned, tone drawings are used when, because of the complication of detail, a line drawing might be confusing. A tone drawing is shown in figure 5. This medium was chosen because it gives an excellent demonstration of the nerves of the neck. This drawing has much lettering, but in this case, as in most anatomic studies, it is necessary to identify the structures.

SUMMARY AND CONCLUSIONS

Illustrations can greatly improve the clarity and conciseness of a medical article when they are used to depict techniques or conditions that cannot be described clearly or with economy of words. The qualified medical illustrator has been specially trained in medical sciences and should be looked on as a consultant by the physician who solicits his help. Simplicity of drawing is to be emphasized when it will suffice to tell the story. Surrounding structures should be subordinated in favor of the main focus of the drawing. Overillustration is to be condemned, for needless drawings only take the time of the reader. The written word can be used by itself as a means of description, but the ideal combination of words and good illustrations makes a paper interesting, attractive, and, what is most important, understandable.

PROGNOSTIC SIGNS IN HODGKIN'S DISEASE

John A. Finkbeiner, M.D., Lloyd F. Craver, M.D.
and
Henry D. Diamond, M.D., New York

The marked variations in the survival of different patients with Hodgkin's disease have given rise to a number of proposed prognostic factors. This report reevaluates these factors by comparing a group of patients with an extremely rapid course against a group of long-term survivors to determine whether a patient with Hodgkin's disease when first seen presents any clinically detectable signs that may aid in estimating the prognosis.

MATERIAL AND METHOD

The hospital charts of 1,000 patients with Hodgkin's disease were reviewed, and 26 patients were found whose total duration of disease from the first estimated symptom to death was six months or less. These patients were then compared with a second group of 73 patients who survived more than 10 years after a positive pathological diagnosis had been made. Neither of the groups is intended to show an index of survival, since, particularly in the long-term group, many cases were eliminated due to the lack of adequate information on the hospital chart. Five patients had double primary neoplasms, i. e., proved Hodgkin's disease associated with a malignant tumor. There were two patients with cancer of the rectum, two patients with cancer of the breast, and one patient with osteogenic sarcoma caused by irradiation received 14 years earlier.

RESULTS

Age at Onset.—Figure 1 demonstrates the age at onset by decade. In the group of patients who survived less than six months, the age range was from 14 to 74 years, with a median of 38 years and an average of 41.5 years. In the group of long-term survivors the range was 5 to 71 years, with a median of 27 and an average of 30.5 years.

Thus it is noted that the long-term survivors in the study group have a median and an average age that are younger than those in the short-term survivors. It is also obvious from figure 1 that the older age groups do not do quite as well as the younger patients. However, inasmuch as long-term survivors existed also in the older age group, this is only a generalization and as such is not statistically significant.

Sex.—In the short-term survivor group there were an equal number of males and females, 13 in each group, while in the long-term survivor group there were 42 (58%) males and 31 (42%) females. The menstrual status of the 13 women who survived less than six months was normal in three, amenorrheic in three, postmenopausal in five, and unknown in two. Of the 31 females who lived more than 10 years after the positive biopsy, 24 had normal menstrual histories, five were postmenopausal, one was prepubertal, and in one the menstrual history was unrecorded. Four women became pregnant during their disease without apparent alteration in the course of Hodgkin's disease. No statistically significant differences were found in sex, race, color, and marital status.

Diagnosis.—Figure 2 presents the diagnosis at the time of the original biopsy of the entire group of patients. All such slides have been reviewed and the diagnoses confirmed. In certain cases the pathological picture could not be completely subdivided, and Hodgkin's disease was the only diagnosis rendered. Three patients whose original tissue biopsy showed Hodgkin's sarcoma lived more than 10 years; one patient has been free of disease for the past 21 years. One patient with Hodgkin's paragranuloma died of the disease within six months after onset of symptoms. Figure 3 refers to the stage of the disease when the patient was first seen at Memorial Center. Class 1 refers to those patients whose disease is presumably localized to one node or one group of nodes. Class 2 signifies regional disease, the involvement of two contiguous groups of lymph nodes, and class 3 includes all cases of this disease more extensive than previously defined, usually signifying generalized disease. In this paper class 0 refers to two patients who were treated elsewhere and who, when they were first seen at Memorial Center, presented no evidence of disease. There are more long-term than short-term survivors in class 1; however, a few patients with disease localized to one area died within six months after the onset of their symptoms. Although this may reflect our inability to detect generalized disease in the very early stage, the same methods of examination and diagnosis were used and therefore should be roughly comparable. By far the ma-

---

From the Medical Neoplasia Service, Memorial Center for Cancer and Allied Diseases.

jority of patients with short-term survival had generalized disease when first seen at Memorial Center, but it should be noted that over one-third of the patients with long-term survival had generalized disease (class 3) when first seen. The source of the diagnosis in most patients was either a surgical biopsy of a lymph node done at Memorial Center or submitted slides of a node biopsy performed at another hospital.

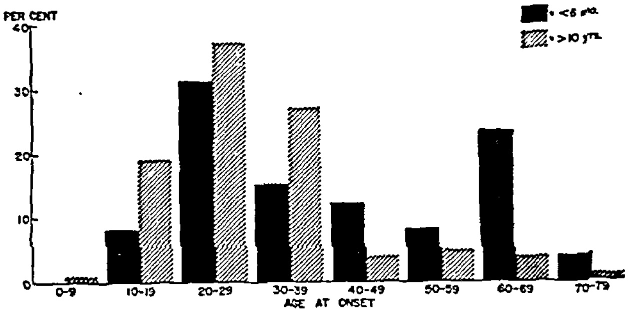


Fig. 1.—Stated age of patients at onset of Hodgkin's disease, by decade.

Family History.—Cancer, tuberculosis, diabetes mellitus, allergy, thyroid disease, and blood dyscrasia were noted in the family history of patients interviewed. Twelve of the 26 patients of the group of short-term survivors and 39 of the 73 patients who were long-term survivors had no significant contributing history. The family history was unknown in 7 of the short-term patients, and 15 family histories were unrecorded in the long-term survivor group. It is obvious that there is no significant family history in this group of patients. None of the patients had a family history of lymphoma.

Personal History.—There was no significant personal history in 16 of the short-term survivors or in 42 of the long-term survivors. The history was not recorded in one short-term survivor and in seven of the long-term patients. Recent upper respiratory tract infection was noted in five and eight, respectively, in the two groups, and history of a major allergy in two and six, respectively. Other recent disease, including measles, and a history of typhoid fever, malaria, tuberculosis, tuberculosis contact, diabetes mellitus, and herpes zoster was also noted, but in none was such a history obtained sufficiently frequently to be of statistical significance. Administration of desiccated thyroid hormone with or without objective evidence of thyroid disease was recorded but could not be shown to be a significant etiological factor.

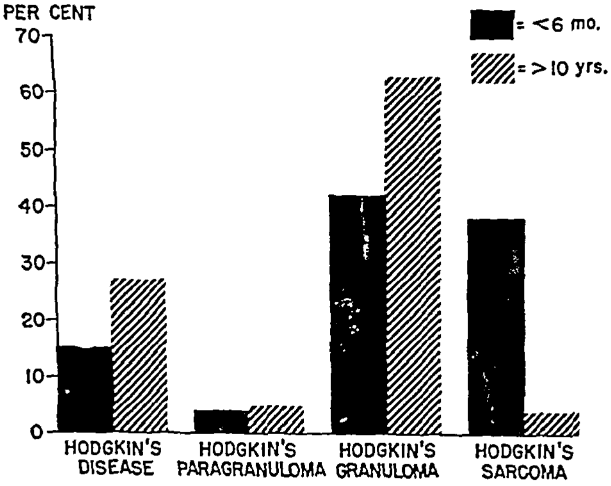


Fig. 2.—Confirmed diagnoses of disease by initial tissue biopsy.

SYMPTOMS

Symptoms When Patients Were First Seen.—The majority of the patients in the short-term survivor group had symptoms when they were first seen at Memorial Center. Twenty-three per cent had fever, 23% had pruritus, 19% had cough, 19% had weakness and fatigability, 15% complained of dyspnea, 8% had nausea with or without vomiting, and 4% stated they had night sweats. Fifteen per cent of the long-term survivors had weakness and fatigue, 14% complained of cough, 12% night sweats, 10% fever, 2% pruritus, and 1% dyspnea. Only 19% of the short-term patients had none of the above symptoms as contrasted to 63% of the long-term survivors.

First Physical Examination.—Table 1 shows the physical findings in the two groups. A statistically significant higher incidence of occurrence is noted in the left upper cervical nodes of the long-term survivors and in the right axillary nodes, spleen, abdominal nodes, and right and left inguinal nodes and of pleural effusion, jaundice, and edema in the short-term survivors ($p < 0.05$). There is no statistically significant difference between the other sites of involvement in this group of patients.

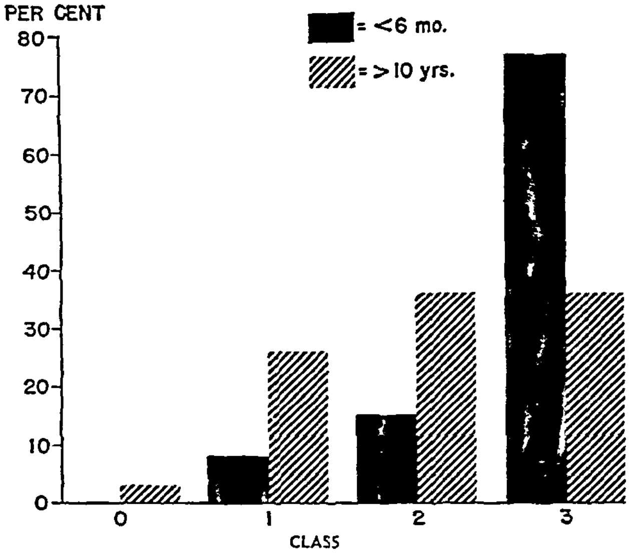


Fig. 3.—Class of disease in patient when first seen at the Memorial Center (for clinical classification, see text).

First Laboratory Examination.—The initial hemoglobin level as recorded on the hospital chart is shown in figure 4. In the short-term survival group, the hemoglobin level ranged from 7.1 to 14.6 gm. per 100 cc. with a median of 11.2 and an average of 10.9 gm. In the long-term survival patients, the range was 6.1 to 16.9 gm. with a median of 11.2 and an average of 11.1 gm. Thus there was no statistically significant difference between these two groups. The initial red blood cell count recorded in the short-term group of patients ranged from 2,800,000 to 4,800,000 per cubic [illegible] with a mean of 4,000,000 and an average of [illegible] ile in the

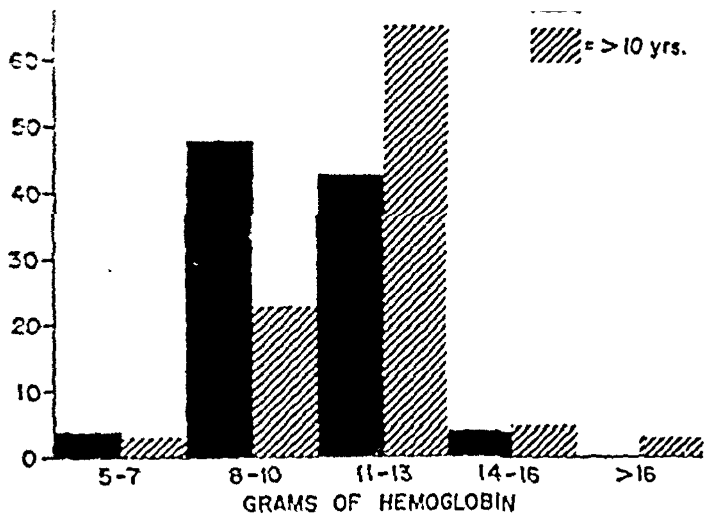


Fig. 4.—Initial hemoglobin level as recorded on hospital chart, in grams :r 100 cc.

kocytosis in the latter patients. In the short-term the white blood cell count ranged from 3,400 to .600 per cubic millimeter with a median of 8,800 and n average of 12,000, while in the long-term survivors the range was 3,400 to 21,600 with a median of 8,500 and an average of 9,200.

Although eosinophilia is a commonly mentioned sign of Hodgkin's disease, by far the majority of our patients

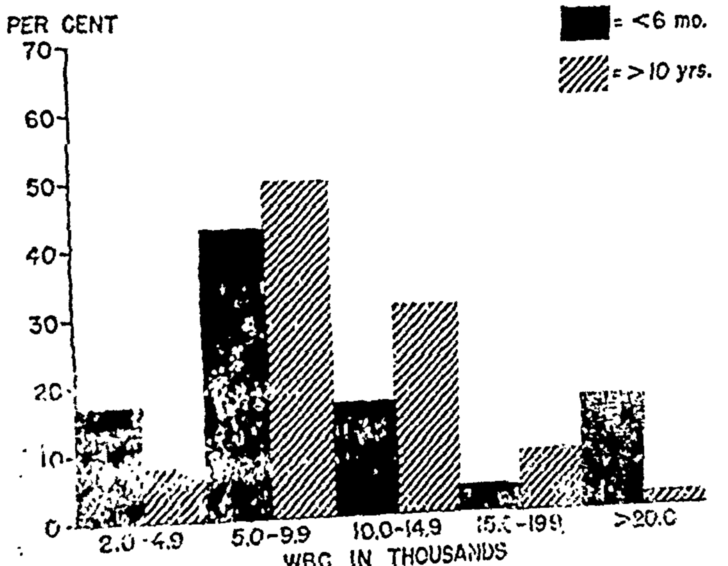


Fig. 5.—Initial white blood cell counts of patients as recorded on hospital chart, in thousands per cubic millimeter.

had a normal percentage of eosinophils found in the routine peripheral blood smear, and no prognostic significance could be determined from either the presence or absence of eosinophils (fig. 6).

Figure 7 shows the percentage of lymphocytes recorded from the routine peripheral blood smear performed when the group of patients was first seen at

	Survived Less Than Six Months	Aft Positi Biop Wa Not
Left upper cervical nodes	15	40
Right upper cervical nodes	46	37
Left lower cervical nodes	35	52
Right lower cervical nodes	54	44
Mediastinal nodes	54	31
Pulmonary infiltration	12	3
Left axillary nodes	35	25
Right axillary nodes	62	26
Splenomegaly	42	11
Hepatomegaly	23	7
Abdominal nodes	27	11
Left inguinal nodes	38	10
Right inguinal nodes	31	8
Nodes in other areas	8	7
Gastrointestinal tract	0	1
Pleural effusion	19	1
Bone	0	1
Skin	12	4
Edema	19	3
Jaundice	8	0
Ascites	8	1

significance can be attached to this finding. The percentage of monocytes was within normal limits in the majority of the patients, with a few patients having monocytosis (fig. 8). When the monocytic-lymphocytic ratio was compared, both the groups had about an equal percentage of patients whose ratios were in the normal range. The increased monocytic-lymphocytic ratio is not significantly different between the groups (fig. 9). Platelet counts and sedimentation rates were performed in an insufficient number of cases to permit analysis. There was no significance in the Wassermann or Mazzini reaction.

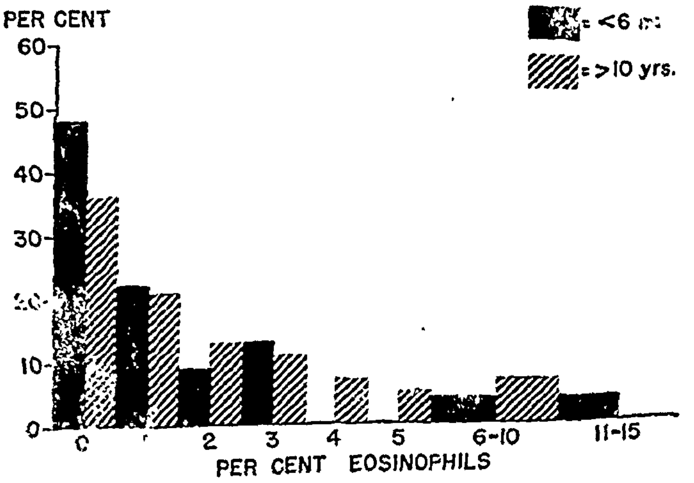


Fig. 6.—Percentage of eosinophils as recorded in the differential cell count of the initial peripheral blood smear.

TREATMENT

Treatme[illegible] or to That Given at Memorial Center.— There wa[illegible] cally significant difference between the two g[illegible] ent received prior to referral to Memorial Center. Of the short-term survivors 15 had no treatment, 9 had varying amounts of x-ray treatment to varying numbers of portals, and 2 had supportive therapy. In the long-term survivors 40 patients had no previous treatment, 26 had varying amounts of x-ray therapy, 2 had supportive therapy only, and 7 had other miscellaneous therapy.

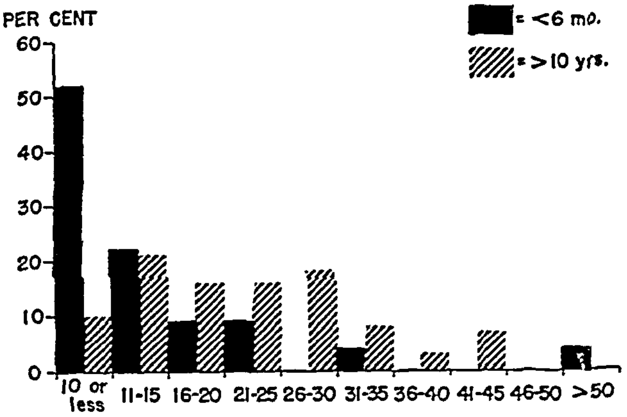


Fig. 7.—Percentage of lymphocytes as recorded in the differential cell count of the initial peripheral blood smear.

Treatment at Memorial Center.—Fourteen of our patients with short-term survival were given x-ray therapy only, and seven patients had x-ray treatment plus chemotherapy, radium, or Heublein total body x-ray therapy. Four patients lived such a short time after first being seen that no specific treatment could be given. One patient received experimental chemotherapy. Of the long-term survivors two patients were free of evidence of disease when first seen at Memorial Center and have received no further treatment. The remaining 71 patients received x-ray therapy; 43 had x-rays alone and the remaining patients had x-ray therapy plus some other type of treatment. Surgery was performed in 3 instances, chemotherapy given in 16, radium in 9, phosphorus 32 on 1 occasion, and Heublein total body x-ray therapy in 8 instances. The short-term survivors had an average of 4 x-ray portals prescribed with a range of 1 to 25 portals, while the long-term survivors had a mean of 10 portals of x-rays with a range of 1 to 65 portals. The short-term survivors had a mean of one course of x-ray therapy with a range of 1 to 4, while the long-term survivors had a mean of 7 courses of x-ray therapy with a range of 1 to 40 courses. Treatment days ranged from 4 to 49 in the short-term group and 6 to 258 days in the long-term group. The total x-ray dose in the short-term group varied from less than 1,000 r (given to three patients) to between 10,000 and 15,000 r (given to one patient). The dose range in the long-term survivor group was less than 1,000 r in two patients to as much as 55,000 r in one patient.

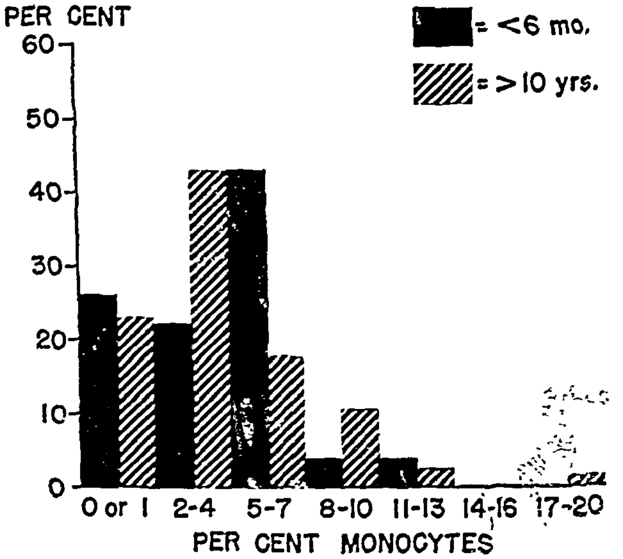


Fig. 8.—Percentage of monocytes as recorded in the differential cell count of the initial peripheral blood smear.

END-RESULTS

The end-results in these patients are shown in table 2. In the short-term survivor group all died of Hodgkin's disease. Of the long-term survivor group, 29 patients died from 10 to 15 years after biopsy proof of their disease. Twenty-five patients of this group died of Hodgkin's disease, one patient died of other causes with no evidence of Hodgkin's disease found at autopsy, one patient died of other causes but Hodgkin's disease was present, and two finally died of other causes and it was not known whether Hodgkin's disease was present. There are 17 patients living 10 to 15 years after their disease had been proved, 11 of whom show no evidence of activity of Hodgkin's disease at the time of this study. Ten patients have died more than 15 years after their disease had been established; eight of these died of Hodgkin's disease, and in one patient who died of other causes it was unknown whether Hodgkin's disease was present. Of the 17 patients living more than 10 years after their diagnosis had been established, 11 have no evidence of activity of their disease and 4 are living with Hodgkin's disease present. One patient has been lost to follow-up, and in one it is unknown whether Hodgkin's disease is present.

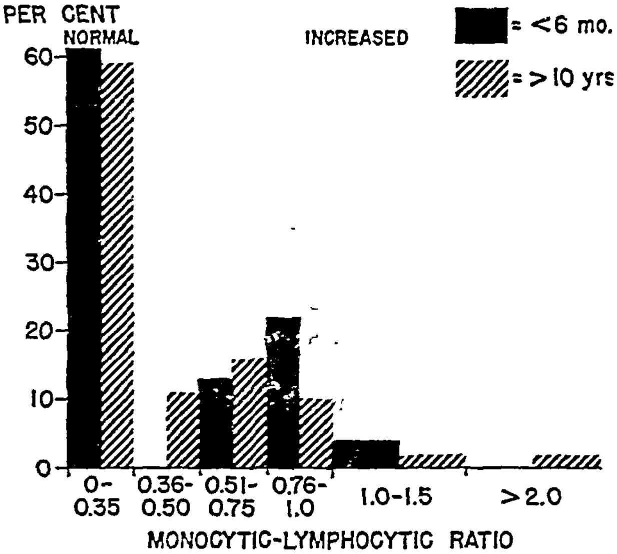


Fig. 9.—Monocytic-lymphocytic ratio as determined from the initial differential count of the white blood cell count.

COMMENT

The data presented again emphasize the difficulty in determining the prognosis in any given case of Hodgkin's disease. While the number of cases in either group is too small to permit complete statistical evaluation, certain conclusions can be made and compared with the available literature.

While accurate tissue diagnosis is necessary for adequate evaluation of Hodgkin's disease, the diversity of the disease must be kept in mind constantly. It is known that different nodes from the same patient may show wide variations in histopathology, and even different portions of the same node may vary greatly in structure. Cognizance of this fact prevents the strict prognostic significance attributed to the tissue diagnosis as advocated by Bersack [1] and by Jackson and Parker,[2] who have emphasized that Hodgkin's paragranuloma has a relatively favorable prognosis but that Hodgkin's sarcoma has a very poor outlook. While such a statement may be generally true, it cannot be applied to an individual case, and others have reported similar observations.[3] Perhaps this question is best summarized by the statement, ". . . of bad omen, in general are . . . a biopsy diagnosis of sarcoma, provided the course within a few months reveals corresponding aggressiveness of the disease . . . and evidence of rapid advance of the disease, regardless of the histopathology of a node biopsy. . . ." [4]

Unicentric disease,[5] especially with early treatment,[6] and marked enlargement of external nodes before treatment [7] have been considered to be favorable signs, while disseminated disease, especially of the viscera,[8] and inguinal node involvement [1] have been designated as unfavorable. Over two-thirds of our long-term survivors did not have localized disease; in fact, about one-third had generalized disease including cases of pulmonary, hepatic, splenic, bone, gastrointestinal, and abdominal node involvement. It is to be emphasized that widespread generalized disease does not necessarily signify a poor prognosis, and, with adequate and aggressive therapy, a certain number of long-term survivals will result.

Persons of either extreme of age are stated to have a poor prognosis.[9] While our data show that a number of older patients have died within a short time after the first symptom of their disease, a number of long-term survivors exist in both extremes of age.

There is general agreement that Hodgkin's disease is more common in males than in females in all age groups, and several reports have indicated that the prognosis is better in women.[10] It is interesting to note that of the 13 women in the short-term group, only 3 were actively menstruating when first seen. Of the long-term survivors, there were slightly more men than women, but when one considers the *much larger group of men in the total* series of 1,000 patients, this loses any statistical significance.

TABLE 2.—*End-Results of Disease in Cases Studied*

	Less Than 6 Mo.	More Than 10 Yr.	Dead 10-15 Yr.	Living 10-15 Yr.	Dead >15 Yr.	Living >15 Yr.
Dead, no evidence of Hodgkin's disease	.. ..	2 (3%)	1	..	1	..
Dead of Hodgkin's disease	26 (100%)	33 (45%)	25	..	8	..
Dead, other causes, Hodgkin's disease present	.. ..	1 (1%)	1	..	..	..
Dead, other causes, unknown if Hodgkin's disease present	.. ..	3 (4%)	2	..	1	..
Living, no evidence of Hodgkin's disease	.. ..	22 (30%)	..	11	..	11
Living, Hodgkin's disease present	.. ..	10 (14%)	..	6	..	4
Living, unknown if Hodgkin's disease present	.. ..	1 (1%)	..	..	..	1
Lost to followup, no evidence of Hodgkin's disease	.. ..	1 (1%)	..	..	..	1
Total	26	73	29	17	10	17

In the literature considerable prognostic significance has been attributed to the blood cell count. The absence of marked changes in the blood cell count,[11] normal or increased lymphocyte count,[7] monocytosis,[12] or an increased monocytic-lymphocytic ratio [12] have been designated as favorable prognostic signs. Allegedly unfavorable signs include a markedly abnormal blood picture,[4] anemia,[13] leukocytosis,[14] leukopenia,[15] eosinophilia,[5b] leukocytosis with eosinophilia,[5b] lymphocytosis,[9d] and lymphopenia.[16] Our data fail to support any of these contentions, for there was no statistically significant difference between the two groups in reference to any of these factors. The lymphocytosis or lymphopenia seemed to vary inversely to the polymorphonuclear percentage and the total white blood cell count without having any particular significance in itself.

In regard to therapy, the short-term survivors did not live long enough to have much treatment, either in the total number of portals, number of treatment days, or the total roentgen doses received, and they did not respond to treatment. As might be expected, a few of the long-term group responded dramatically to a small amount of irradiation of localized disease. Even more dramatic was a larger group who were first seen with generalized disease including involvement of lung, pleura, gastrointesti-

---

1. Bersack, S. R.: Hodgkin's Disease—Incidence and Prognosis: Statistical Correlation with Clinicopathologic Picture, Arch. Int. Med. 73: 232 (March) 1944.

2. (*a*) Jackson, H., Jr., and Parker, F., Jr.: Hodgkin's Disease: Treatment and Prognosis, New England J. Med. 234: 103, 1946. (*b*) Jackson, H., Jr.: Hodgkin's Disease and Allied Disorders, New York, Oxford University Press, 1947.

3. (*a*) Slaughter, D. P., and Craver, L. F.: Hodgkin's Disease: Five Year Survival Rate: Value of Early Surgical Treatment: Notes on Four Cases of Long Duration, Am. J. Roentgenol. 47: 596, 1942. (*b*) Sturgis, C. C.: Hematology, Springfield, Ill., Charles C Thomas, Publisher, 1948.

4. Craver, L. F.: Hodgkin's Disease, in *Practice of Medicine*, Tice, F. L., editor, Hagerstown, Md., W. F. Prior Company, Inc., 1951, vol. 5, p. 107.

5. (*a*) Jackson, H., Jr., and Parker, F., Jr.: Hodgkin's Disease: I General Considerations, New England J. Med. 230: 1, 1944. (*b*) Gilbert, R.: *Radiotherapy in Hodgkin's Disease (Malignant Granulomatosis): Anatomic and Clinical Foundations*, Am. J. Roentgenol. 41: 198, 1939. (*c*) Jackson and Parker.[2a] (*d*) Craver.[4]

6. Craver.[4] Gilbert.[5b]

7. Hoster, H. A.; Dratman, M. B.; Craver, L. F., and Rolnik, H. A.: Hodgkin's Disease, Cancer Res. 8: 1, 1948.

8. Craver.[4] Jackson and Parker.[2a]

9. (*a*) Bersack.[1] (*b*) Craver.[4] (*c*) Jackson and Parker.[5a] (*d*) Smith, C. A.: Hodgkin's Disease in Childhood: Clinical Study with Résumé of Literature to Date, J. Pediat. 4: 12, 1934.

10. Craver.[4] Jackson and Parker.[5a] Jackson and Parker.[2a] Smith.[9d] Smeltzer, C. C.: Hodgkin's Disease: Special Reference to Survival, J. Tennessee M. A. 38: 281, 1945.

nal tract, skin, liver, spleen, abdominal nodes, and had abnormal peripheral blood cell counts who, after many courses of therapy to multiple sites for periods up to three years, finally achieved prolonged remission of disease and have remained happy, useful citizens.

SUMMARY AND CONCLUSIONS

Study of patients with proved Hodgkin's disease with short and long survival periods showed that clinically detectable factors, namely age, sex, race, color, marital status, family history, personal history, extent of disease, symptoms, presenting physical examination, and laboratory aids are not reliable prognostic signs. Despite such unfavorable signs as generalized disease, constitutional symptoms, Hodgkin's sarcoma, or an abnormal blood picture, carefully planned therapy persistently pursued may result in prolonged survivals.

444 E. 68th St. (Dr. Finkbeiner).

11. (*a*) Craver.[4] (*b*) Desjardins, A. U.: Problems in Roentgen Therapy for Hodgkin's Disease and Lymphosarcoma, Radiology **39:** 16, 1942.

12. Wiseman, B. K.: Blood Pictures in Primary Diseases of Lymphatic System: Their Character and Significance, J. A. M. A. **107:** 2016 (Dec. 19) 1936.

13. (*a*) Desjardins.[11b] (*b*) Haden, R. L., and Burns, J. T.: Hodgkin's Disease: Review of 47 Cases, Cleveland Clin. Quart. **9:** 144, 1942. (*c*) Hoster, H. A., and others: Studies in Hodgkin's Syndrome: Clinical and Etiologic Studies, Ohio M. J. **43:** 721, 1947.

14. Haden and Burns. [13b] Sturgis. [3b]

15. Hoster and others. [13c] Sturgis. [3b]

16. Hoster and others.[13c] Wiseman. [12]

EXPOSITION AS APPLIED TO MEDICINE

A GLANCE AT THE ETHICS OF IT

Richard M. Hewitt, M.D., Rochester, Minn.

Physicians are under obligation to teach, and teaching is done largely by means of the printed page. When I chose medical editing as my full-time contribution to that educational effort, I entered an occupation that W. Albert Noyes Jr. recently said is a way to lose old friends and to make no new ones. True enough, an editor is paid to find fault. The faultfinding here, however, will be broadly based. First in work on THE JOURNAL of this association, and later in war work supported by my present organization, I read thousands of manuscripts that originated in places situated throughout the United States. I aim, then, at no person, at no group, but at certain writing practices that, springing from innocent motives, finally have beset members of the medical profession.

TO REFRAIN FROM PUBLICATION

We of that profession are beset most of all by the great volume of material we must read. In the autumn of 1953, Mary E. Grinnell,[1] head of the reference section of the Armed Forces Medical Library, obtained from Jacqueline Chambers, one of her staff, the information, "at best an estimate," that there were "4512 medical journals in the world, and 1439 in the United States alone." The research from which these figures resulted was "carried on in connection with the Welch Medical Library Indexing Project, Johns Hopkins University." Included in the totals were "only substantive journals containing original articles and not news bulletins, reprint journals and the like." This situation has been growing worse, and the current remedy seems to resemble that of the man who borrows to get out of debt. We are producing still more pages to read. Abstracts, digests, and collective reviews augment the encumbering glut.

We physicians have not handled our own affairs in this matter. We could handle them as scholars have done. The scholars went for th[illegible] and they said, in effect: "Except for [illegible] be called an 'occasional piece,' [illegible] tion in a learned journal of an [illegible] ich neither contains anything ne[illegible] on anything old, performs an unethical act and may expect it to be remembered to his discredit." If we would define publication of unoriginal, repetitious medical material as a violation of medical ethics, and would officially reprove it as such, the tawdry author would be silenced and the genuine one helped. A man of the latter type, having something noteworthy to say, may justifiably say it half a dozen times in as many months, but he would prefer to publish only once. If he were protected by the declaration of his medical society that multiple publication would lay him open to the charge of unethical conduct, he would be furnished with an effective reply to importunate persons who feel that "everything" must be printed, even if publication of unnecessary material is paradoxically necessary to that end. For that matter, "Johnson was by no means of opinion," wrote Boswell,[2] "that every man of a learned profession should consider it as incumbent upon him . . . to appear as an author." What would the forthright old man have had to say of the professional man who appeared as an author even though he had not the full right of authorship?

TO BE IN TRUTH AN AUTHOR

Authorship cannot be conferred; it may be undertaken by one who will shoulder the responsibility that goes with it. To a responsible writer, an article, with his name on it, is the highest product of his mind and art, his property, as nearly flawless as he can make it, founded in his character and evidence of it. If that describes the acceptable standard, medical writers, a responsible group, are in present need of reconsidering the implications of joint authorship. The reader of a report issued by two or more authors has a right to assume that each author has some authoritative knowledge of the sub-

---

From the Section of Publications, Mayo Clinic, and the Mayo Foundation.

Read before the Section on Anesthesiology at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 22, 1954.

The Mayo Foundation is a part of the University of Minnesota.

[1] Grinnell, M. E.: Personal communication to the author.

[2] Boswell, J.: The Life of Samuel Johnson LL.D., London, Engl[illegible] J. M. Dent & Sons Ltd., and New York, E. P. Dutton & Co., Inc. Ev[illegible]man's Library, reprinted 1914, vol. 2, p. 133.

ject, that each contributed to the investigation, and that each labored on the report to the extent of weighing every word and quantity in it. And when, of two authors, one is a junior investigator and the other a senior, who acted as adviser in the work, the reader is reasonably safe in his assumption. Such a seasoned investigator has a reputation to maintain. He would be expected to slog at an article that was to appear under his name, at least to the extent of being uncompromisingly critical of another's part in it.

The by-line, then, is not merely a credit-line. He who took some part in the investigation, be it ever so minor, is entitled to credit for what he did. If, however, any one of the reader's assumptions mentioned above cannot be applied to such a one, the credit due him, be it ever so major, does not justify his inclusion as an author. His contribution should be acknowledged in the body of the paper or, if the publisher can be induced to print it, in a footnote. Further, the generous chap who would bestow authorship on another, perhaps without even submitting the manuscript to him, may do his colleague no favor. For the investigation is one thing, the report of it another, and, sad the day that this must be admitted: The investigation may have been excellent but the report, bad.

TO QUOTE WITH CREDIT

The physician, who himself guards no trade secrets, may become careless about other abstract property rights, such as the right of authors to their own words. He shares with others a common foundation in the liberal arts. Often, however, although he has built the sciences of that foundation upon a rock, he has allowed the humanities of it to rest upon the sand (Matthew VII: 24 and 26). Thus, he may not have bothered his head about instruction such as is given in an annually printed publication of one liberal arts college. Almost a page of this publication is occupied by some paragraphs headed "plagiarism." The term is defined, and the use of quotation marks is explained. The concluding sentences are [3]: "Since all of us necessarily adopt and absorb the ideas of others, we must be scrupulous in maintaining the spirit of acknowledgment to others. Fundamentally, your integrity is at stake. Unless you make specific acknowledgment, you claim the credit for yourself for anything that you write. In general, it is better to say too much about your sources than too little." That is meant especially for freshmen. The seed is sown early.

Then where lay the remissness in the education of the physician who submitted a manuscript to an editor of my acquaintance? The editor found that the effective opening sentence had been also the opening sentence of an article cited by the author of the manuscript. By one of the coincidences of life, I knew the author of that manuscript. He is dead, which accounts for the past tense. I believe him to have been strictly honest. He was the possessor of an advanced medical degree and the recipient of a noteworthy medical honor conferred on him in a foreign land. He was the best of the system that had produced him. Yet, apparently, he believed that to give a reference at the end of his own article entitled him to use, without quotation marks, the words of another. When the editor took him to task for his defection, the author replied that he thought he had followed standard practice. The worst of it is that in medical printed matter there can be found basis for his belief.

As for uncredited paraphrase, it is only necessary to quote again from the college publication that has been mentioned: "If you imitate the language or thought of some one else, you are paraphrasing: that is, you are restating another's thought in your own language. In such cases you may omit the quotation marks. However, unless you specify in a footnote the source of the thought, you are plagiarizing." To pursue this subject one step further: The author who paraphrases or refers to an article should have read it.

TO READ WHAT IS CITED

Often the physician refers to an original work that he has not consulted; he has read an abstract or a paraphrase in the work of another author. The physician's motive is excellent. He thinks that since he has the reference to the cited author's original work the reader may as well be given it. If the reference is inexact, however, the author has not helped the reader, and if the quotation or paraphrase is erroneous he is unfair to the original author and unjust to himself. The honest thing to do, and the safe thing for him, is by some accepted method to refer to what he actually read and to insist that the reference be printed. Since the author of a manuscript himself may err, the chance of inaccuracy is increased by one more than as many intermediaries as lie between him and his source. In this connection, Samuel Johnson again comes to mind. Boswell quoted him thus [4]: "It is amazing, Sir, what deviations there are from precise truth, in the account which is given of almost every thing." Yes, a writer cannot trust anyone, not even himself.

TO EMPLOY "DUE DILIGENCE AND CARE"

The responsible author does his utmost to minimize his own unworthiness. He writes not to show off but to tell what his reader wishes and needs to know. What the author releases springs not so much from pride as from a sense of duty. When he sets down an unqualified declaration in black and white, under or over his name, therefore, it means that, within reasonable bounds, he is sure of it. Consequently, just as he repeated the work on which the paper was based, in order to be certain of his data, so will he confirm, confirm again, and cross confirm the contents of his article. He will see that a definition given in one part of it is not violated in another part; that his tables, graphs, and text agree; that established categories are not mixed; and that his arithmetic is sound. In his writing, then, as in his practice, he will live up to that dread requirement that he exercise "due diligence and care." Or, if the figurative language of the folkways is preferred, his story is not "cut out of the whole cloth" but is "all wool and a yard wide."

THE MEDICAL EXPOSITOR'S TEN COMMANDMENTS

An attempt to summarize the foregoing thoughts might take one of several forms; but ethical concepts probably never have been presented more memorably than in the Ten Commandments. I inquired of several persons whether adopting that hallowed form for my purposes would give offense. I was reassured. Therefore, may I submit 10 commandments for the medical expositor, and consider them, please, always with the realization that an exceptional circumstance may make one or another of them inapplicable:

---

[3] Wesleyan University Bulletin, Middletown, Conn., Campus Directory and Regulations Number, 1953-1954, vol. 47, p. 68.

[4] Boswell,[2] p. 286.

1. Thou shalt not, unless circumstances be extraordinary, release for publication a paper that neither contains anything new nor sheds new light on something old.
2. Thou shalt not allow thy name to appear as a co-author unless thou hast some authoritative knowledge of the subject concerned, hast participated in the underlying investigation, and hast labored on the report to the extent of weighing every word and quantity therein.
3. Thou shalt not fail to place within quotation marks the words of another, nor shalt thou fail to verify the accuracy of thy quotations.
4. Thou shalt not consider that to alter the words of another frees thee from the obligation to credit that other with an idea that thou hast borrowed from him.
5. Thou shalt not publish a reference in such manner that the reader will think thou hast read a certain article if thou hast read only an abstract or paraphrase thereof.
6. Thou shalt not write to please thyself but to meet the needs of thy reader.
7. Thou shalt not publish, as if thou wert sure of it, that of which thou art not sure.
8. Thou shalt not allow one part of thy paper to disagree with another part thereof.
9. Thou shalt not mix categories.
10. Thou shalt not fail to verify, again and yet again, thy arithmetic.

102 Second Ave., S. W.

CORTISONE AND HYDROCORTISONE GIVEN PARENTERALLY AND ORALLY IN SEVERE TETANUS

Roger A. Lewis, M.D., Rajaninath S. Satoskar, M.B., B.S., Gopalkrishna G. Joag, M.B., B.S.,
Bhalchandra T. Dave, M.B., B.S.,
and
Jamnadas C. Patel, M.D., M.R.C.P., Ph.D., Bombay, India

Although tetanus is rarely encountered in temperate zones, it remains quite common in tropical areas. In India, where patients may not report for treatment until late in the course of the disease, the mortality is high, varying between 46 and 56%.[1] Since the discovery of immunoprophylaxis and immunotherapy about 50 years ago there has been little further advance in the treatment of clinical tetanus save perhaps for the introduction of penicillin and tracheotomy[2] as prophylactic measures against complications of the disease.

It is well known that the severity of tetanus can be estimated from the period of incubation, time between injury and first symptom, and from the period of onset, time between the first symptom and the development of convulsions When the incubation period is less than seven days or when the period of onset is less than 48 hours, there is little chance of recovery. In a series of 43 patients given excellent treatment,[3] only 1 patient (a baby) survived with an onset period of less than 48 hours, *and only 2 patients survived with an incubation* period of less than seven days (with incubation periods of five and six and three-fourths days).

Animal experiments have shown that injections of desoxycorticosterone and cortisone do not favorably affect the course of tetanus infection or the prognosis after the administration of tetanus toxin.[4] Corticotropin was found to be unable to prevent the lethal action of large doses of tetanus toxin in mice.[5] Cortisone injections have been given to one patient with tetanus who was suffering from an allergic reaction to antiserum rather than from the infection[6] and to one other patient who was treated by conventional methods and tracheotomy as well.[7] From the animal experiments and from these two cases it is not possible to draw any conclusion concerning the action of cortisone in clinical tetanus.

Recently we have published a controlled study on severe cases of tetanus in which half of the patients were given a continuous intravenous infusion of corticotropin in doses of about 20 mg. a day. This treatment was associated with a reduction in fever, tachycardia, and respiratory distress and with an amelioration of the muscular rigidity as well as a dimunition in the frequency and severity of convulsions.[8] In general the clinical course was milder and shorter when corticotropin was given. The reduction in mortality was considerable but not of statistical significance. Most of the patients with

---

From the Department of Pharmacology of the Seth G S Medical College and the Medical Service of Dr J. C. Patel of the K E M. Hospital

Visiting Professor and Medical Officer of the World Health Organization (Dr. Lewis)

The cortisone and hydrocortisone used in this study were supplied by Schering Corporation, Bloomfield, N J, and Merck Co, Rahway, N. J

[1] (*a*) Ghosh, S. M Tetanus—Its Management, J. Indian M. A **19**: 328-330 (June) 1950 (*b*) Sahiar, N K: Some Observations on Tetanus, Indian Physician **3**: 120-128 (April) 1944 (*c*) Yodh, B B Further Observations on the Treatment of Tetanus, Brit. M J **1**: 855-857 (April 24) 1937

[2] Godman, H E, and Adriani, J: Management of Patients with Tetanus Some Clinical Experiences with Various Muscle-Relaxing Agents, J. A M A **141**: 754-756 (Nov 12) 1949

[3] Cole, L: The Prognosis of Tetanus, Lancet **1**: 164-168 (Jan. 27) 1940

[4] Greene, A E; Ambrus, J. L, and Gershenfeld, L: Effect of Cortisone and Desoxycorticosterone on Infection with Tetanus Spores and on the Toxicity of Tetanus Toxin, Antibiotics & Chemother. **3**: 1121-1124 (Nov) 1953

[5] Spector, S, and Mercer, R. D: The Effect of Pituitary Adreno corticotrophic Hormone on Experimental Tetanus in Mice, J. Infect Dis **89**: 224-225 (Nov -Dec) 1951

[6] Scheinberg, L C.: Tetanus Treated with Cortisone, U S Armed Forces M J. **3**: 1377-1381 (Sept) 1952

[7] Christensen, N. A, and others: Cortisone in the Treatment of Tetanus Report of a Case, Proc Staff Meet, Mayo Clin **27**: 28-32 (Jan 16) 1952.

[8] Lewis, R A, and others: Corticotropin (ACTH) in Severe Tetanus, Indian J M Sc **8**: 1-14 (Jan) 1954

fatal cases succumbed in the first 48 hours, before corticotropin could exert its maximum effect; in fact none of the patients treated with corticotropin succumbed after 48 hours of treatment had been completed.

Subsequently we attempted a combination of corticotropin and cortisone but experienced some difficulty in the regulation of dosage.[9] However it was noted that those patients who received cortisone by the oral route fared better than those who were given the hormone by injection. With these observations in mind a new series of cases was begun in which 20 control patients were alternated with 20 patients receiving hormone. Of the latter there were 5 who received cortisone intramuscularly, 10 who were given cortisone by mouth, and 5 who received hydrocortisone by mouth. These 40 patients serve as a basis for the present report.

TABLE 1.—*Patients Treated According to Conventional Methods (Control)*

Case, No.	Age, Yr.	Sex	Type of Injury	Incubation Period, Days	Onset Period, Hours	Course on the Ward
1	12	M	Contusion	7	14	Spasms not controlled
2	25	F	Contusion	14	20	Temperature 106 F; spasms worse
3	14	F	Puncture	12	48	Temperature 104 F; spasms worse
4	4	F	Otorrhea	7	24	Spasms worse; pulmonary edema
5	15	M	Contusion	6	21	Fever and cardiac failure
6	12	M	Puncture	12	24	Spasms worse; pulmonary edema
7	24	M	Contusion	9	16	Severe, uncontrolled spasms
8	8	M	Pig bite	7	20	Spasms worse; respiratory failure
9	30	F	None	..	6	Temperature 104 F; spasms worse
10	4	F	Ulcer	15	24	Temperature 103 F; spasms worse
11	38	M	Contusion	8	36	Spasms worse; pulmonary edema
12	40	M	None	..	24	Spasms worse; pulmonary edema
13	10	M	None	..	45	Recovered
14	25	F	Abortion	4	15	Temperature 105 F; respiratory failure
15	11	F	Otorrhea	7	25	Circulatory shock
16	8	M	Contusion	9	16	Recovered
17	30	M	Puncture	14	24	Temperature 104 F; spasms worse
18	10	F	Puncture	7	72	Recovered
19	10	M	Contusion	2	12	Temperature 103 F; spasms worse
20	24	F	Puncture	7	48	Temperature 104 F; spasms worse

CLINICAL PROCEDURE

The criteria for the selection of severe cases and the basic treatment given to all patients were the same as in the previous study.[8] From the patients admitted to the tetanus ward, only those with the severest disease were selected for the series. When at least four out of five of the following conditions were satisfied, the case was considered to be severe: marked trismus; generalized convulsions; an incubation period of seven days or less (the time between injury and trismus); a period of onset of 48 hours or less (the time between the occurrence of trismus and spasms); or a rectal temperature of 100 F (within 24 hours of the patient's admission or 48 hours from the beginning of convulsions). One patient with severe burns was excluded from the series because the injury itself determined the final outcome.

As soon as the diagnosis was settled, adults were given 1 cc. of epinephrine, 1/1,000 and 1/100 grain (0.06 mg. and 0.6 mg.) of atropine followed by the intramuscular injection of 120,000 units of antitetanus serum. Penicillin, 200,000 units, was given twice a day until normal temperature persisted. A second intramuscular injection of serum was made after 24 hours. To relieve spasms 4 to 8 cc. of paraldehyde was injected intramuscularly as required. Occasionally 10 cc. of a 10% solution of mephenesin in 25% glucose was given to facilitate therapeutic procedures. Urinary retention, pulmonary edema, and high fever were treated by conventional methods, and a simple enema was given on alternate days. Children were given proportionately smaller doses of the same drugs.

Alternate patients in the series were given adrenal hormone therapy. The first 5 received cortisone by intramuscular injection; the next 10 patients were given cortisone by mouth, and the last 5 were given hydrocortisone orally. One of the patients in the last category received both hydrocortisone and cortisone. Insofar as it was possible, the dose of hormone used was that amount that appeared to be just sufficient to counteract or prevent a rise in the temperature.

Eosinophil estimations were performed on capillary blood by direct count after appropriate staining.[10] We have kept a record of the vital signs, the distance between the teeth when the mouth was open to the maximum extent, and the severity of convulsions. For charting we have used the signs 1 to 4+ to indicate the severity and frequency of generalized spasms.

RESULTS

From Oct. 6, 1953, to Feb. 9, 1954, there were 103 patients admitted to the tetanus ward (excluding tetanus neonatorum). Six patients left the ward against medical advice, and one was found to be suffering from rabies. From the remaining 96 only 40 were classified as severe and 56 either did not fit into this classification or had a complicating condition that prejudiced the outcome. Among the 40 patients selected for further study, all had either an incubation period of 7 days or less, or an onset period of 48 hours or less, while 7 of the controls and 8 of the treated patients had both. There was one case of puerperal tetanus in the control series and one in the treatment series. There were three patients with no injury in the control series and three such patients in the treatment group. A general picture of the case material can be obtained from inspection of tables 1 to 4, which give the age and sex of the patients, the type of injury, the incubation and onset periods, and the clinical course.

The clinical course of many of the patients given hormone therapy was quite different from that of those who received conventional treatment alone. Among the controls a rising temperature was usual, (cases 9 and 17, table 1), while among the patients treated with cortisone this was less frequent (case 14, table 3). Even in the controls who recovered there was a hectic febrile period (case 13, table 1) while among the hormone-treated patients this was less prominent (cases 8, 12, and 13, table 3).

---

[9] Lewis, R. A., and others: Unpublished data.

[10] MacFarlane, J. C. W., and Cecil, G. W.: Eosinophil Counting: Modification of Pilot's Method, Brit. M. J. 2: 1187-1189 (Nov. 17) 1951.

Rising temperature was usually associated with a rise in pulse leading to pulmonary edema or with more frequent spasms requiring larger doses of paraldehyde eventually leading to respiratory failure. In general, when fever was controlled, the patient survived, although death occurred in two patients after fever had been brought under control with cortisone given orally (case 9, table 3) or injected cortisone (case 4, table 2).

TABLE 2.—*Patients Treated Intramuscularly with Cortisone*

Case, No	Age, Yr.	Sex	Type of Injury	Incubation Period, Days	Onset Period, Hours	Course on the Ward
1	5	F	Otorrhea	?	30	Temperature 105 F; pulmonary edema
2	5	F	Contusion	3	14	Spasms worse; respiratory failure
3	13	M	Puncture	15	31	Temperature 102 F; spasms worse
4	24	F	Contusion	14	1	Fever controlled; spasms worse
5	2	M	Puncture	6	5	Temperature 103 F; spasms worse

When fever was controlled through the oral administration of cortisone or hydrocortisone, spasms were less frequent and less severe so that the dose of paraldehyde could be kept at a moderate level. However, when cortisone was administered by injection, the intensity and frequency of spasms seemed to be exaggerated, and this impression is confirmed by the early demise of these cases.

As previously noted in patients treated with corticotropin, reduction in dosage or discontinuance of therapy late in the course was occasionally followed by a short relapse with fever and an aggravation of the muscular rigidity and spasms (case 8, table 3). When a patient's temperature rose during hormonal therapy, an increased dose usually prevented further rise (cases 8 and 13, table 3), but even 350 mg. per 24 hours did not control the fever in one case (case 14, table 3). Best results were obtained when it was possible to start hormonal therapy early in the course of the infection (case 13, table 3). On the other hand, when hormonal therapy was delayed due to late arrival of the patient or uncertainty as to whether the criteria for severity would be fulfilled (case 19, table 4), the results were less satisfactory.

The very mild course exhibited by several patients treated orally with cortisone, such as in case 12 (table 3), might suggest that these did not really have severe disease, even though rigorous criteria were applied in their selection. However, in case 8 (table 3), such a mild course was the result of hormonal therapy, for, when the dose of cortisone was reduced in this patient, all the signs and symptoms associated with a severe case appeared and disappeared again when the dose of hormone was increased.

Case 11 (table 3) is especially interesting since puerperal tetanus arising after delivery or abortion is especially serious. Eight similar cases reported from this hospital in 1944 were all fatal.[1b] In the series of patients in whom corticotropin was evaluated, three more cases were reported, the two patients who did not receive hormonal therapy succumbed while the one receiving corticotropin had a stormy course with eventual recovery.[8] Although the patient in case 11 manifested some fever during the course, her general condition remained good and spasms were easily controlled with moderate doses of paraldehyde.

Another patient (case 13, table 3) deserves special attention. This child had a lesion of the right thumb sustained four days prior to admission with development of convulsions within three hours of the first symptoms. On admission opisthotonos and spasms were severe. She required prolonged treatment with relatively large doses of cortisone, but she survived without complications. Her case may be contrasted with the recent report of two children who had incubation periods of four and six days and who were treated with large doses of antiserum, penicillin, thiopental, and gallamine triethiodide and who succumbed in one and three days, respectively.[11]

In table 5 we have gathered together the figures for eosinophil level during the period of hospitalization. It may be noticed that eosinophils were found on the day of admission in only one patient. It is also interesting to note the temporary rise in eosinophil count associated with the temporary relapse in case 8 (treatment), which occurred when the dose of cortisone was reduced.

The duration of hospitalization of patients with fatal disease is given in table 6 for the 40 cases in this series, and 56 patients with milder disease that were hospitalized at the same time, and similar figures for the study on corticotropin in severe tetanus.[8] In the patients treated with corticotropin or orally administered hormone, there was only one death after the first 48 hours and this may have been associated with insufficient dosage of cortisone (case 14, table 3). However, the most interesting result shown in table 6 is the fact that orally administered cortisone was able to prevent some of the deaths that occur in the first 48 hours.

TABLE 3.—*Patients Treated with Orally Administered Cortisone*

Case, No	Age, Yr.	Sex	Type of Injury	Incubation Period, Days	Onset Period, Hours	Course on the Ward
6	26	M	Abscess	15	30	Recovered
7	25	F	None	..	24	Fever and spasms worse
8	15	M	Puncture	15	34	Recovered
9	50	M	None	..	12	Temperature 101 F; pulmonary edema
10	50	F	Contusion	10	12	Recovered
11	17	F	Childbirth	6	31	Recovered
12	8	M	Puncture	9	30	Recovered
13	6	F	Puncture	4	3	Recovered
14	8	F	Puncture	3	20	Temperature 107 F; respiratory failure
15	4	M	Contusion	5	24	Temperature 105 F; respiratory failure

TABLE 4.—*Patients Treated with Orally Administered Hydrocortisone*

Case, No	Age, Yr.	Sex	Type of Injury	Incubation Period, Days	Onset Period, Hours	Course on the Ward
16	32	M	Puncture	7	36	Fever and spasms worse
17	8	F	Otorrhea	?	36	Recovered
18	16	M	Contusion	7	36	Temperature 104 F; respiratory failure
19	30	M	Contusion	14	36	Fever and spasms worse
20	10	M	None	..	24	Recovered

---

[11] McIntyre, J H: Treatment of Tetanus, Brit. M. J. 2:866-867 (Oct. 17) 1953

In the 20 control patients of this series the number of survivors was 3, while in the group of 10 treated with cortisone orally the number of survivors was 6. Evaluating the statistical significance of this difference by conventional methods we find chi square to be 4.5, which indicates less than a 5% likelihood of the findings being the result of chance.

Table 5.—*Eosinophil Count in Severe Tetanus*

Case No.	Eosinophils per Cubic Millimeter on Each Successive Day After Admission															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Control																
1	0	..	0	..	..	..	..	..	..	..	..	..	..	..	..	
2	..	0	..	0	..	..	..	..	..	..	..	..	..	..	..	
3	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
4	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
5	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
6	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
7	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
8	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
9	0	..	0	..	0	..	0	..	0	..	..	..	..	..	..	
10	Not counted				..	..	..	..	..	..	..	..	..	..	..	
11	0	..	0	..	0	..	..	..	..	..	..	..	..	..	..	
12	..	0	0	..	..	..	..	..	..	..	..	..	..	..	..	
13	0	..	0	0	..	11	..	66	..	88	..	165	..	..	..	Recovery
14	..	0	..	..	..	..	..	..	..	..	..	..	..	..	..	
15	Not counted				..	..	..	..	..	..	..	..	..	..	..	
16	0	..	0	..	11	14	..	..	..	..	..	..	..	..	..	Recovery
17	0	..	0	..	0	..	..	..	..	..	..	..	..	..	..	
18	..	0	..	0	..	41	132	..	..	..	..	..	..	..	..	Recovery
19	Not counted				..	..	..	..	..	..	..	..	..	..	..	
20	0	..	0	..	..	..	..	..	..	..	..	..	..	..	..	
Treatment																
1	Not counted				..	..	..	..	..	..	..	..	..	..	..	
2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
3	0	0	..	..	..	..	..	..	..	..	..	..	..	..	..	
4	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
5	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
6	33	0	..	55	0	..	0	..	..	77	..	220	..	..	..	Recovery
7	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
8	0	0	0	..	0	..	0	55	0	..	41	..	198	..	..	Recovery
9	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
10	..	..	11	0	0	0	11	..	77	148	..	..	..	..	..	Recovery
11	0	0	..	0	..	0	..	0	0	..	..	0	..	..	22	Recovery
12	0	..	0	..	0	..	0	..	0	..	0	22	..	110	..	Recovery
13	0	0	..	..	0	..	11	..	11	..	22	..	66	187	..	Recovery
14	0	0	..	0	0	..	..	..	..	..	..	..	..	..	..	
15	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
16	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
17	0	..	0	..	0	..	88	..	102	..	..	..	..	..	..	Recovery
18	0	..	0	..	..	..	..	..	..	..	..	..	..	..	..	
19	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
20	0	..	0	..	0	..	0	..	..	..	..	..	..	..	..	

REPORT OF CASES

Case 9 (Table 1).—A widow, aged 30 years, complaining of trismus of 24 hours' duration and spasms for 6 hours was admitted to the hospital. There was no history of injury, otorrhea, or pregnancy, although menses had been irregular for two months. On admission there was generalized rigidity with opisthotonos. Her temperature was 100 F, pulse 120 per minute, and respirations 26 per minute. Routine treatment did not prevent a rising temperature and increasing convulsions. Temperature reached 104, pulse 140 per minute, and respirations 40 per minute. Finally the respirations became irregular, and the patient died seven days after admission.

Case 13 (Table 1).—A 10-year-old boy was admitted to the hospital because of a stiff jaw that had been present for 24 hours. He had generalized rigidity and exaggerated reflexes. His temperature was 101 F, pulse 128 per minute, and respirations 32 per minute. After the patient was in the hospital 21 hours, opisthotonos and convulsions developed. He was given routine therapy, and both fever and spasms subsided by the 9th day, so that he could be discharged on the 21st day.

Case 17 (Table 1)—A 30-year-old man was admitted to the hospital because of stiff jaw and spasms. Fifteen days previously he had injured the sole of his right foot on a nail. The spasms came on about 24 hours after the trismus. His temperature was 100 F on admission, with a pulse of 120 per minute, and respirations of 30 per minute. Despite routine treatment the temperature and spasms gradually increased. On the fifth day the patient's temperature reached 104, and he died in respiratory failure.

Case 8 (Table 3).—A 15-year-old school boy was admitted because of pain in his neck and a stiff jaw of one day's duration. He gave a history of a thorn-punctured lesion of the left foot 15 days before the onset of trismus. He had marked opisthotonos and rigidity on admission, with a temperature of 100 F, pulse of 110 per minute, and respirations of 24 per minute. He was given routine therapy and cortisone by mouth even before the onset of convulsions, which were noted on the ward 34 hours after the first symptoms. While on cortisone therapy, 100 mg. daily, his temperature remained at 98 to 100 F, and symptoms were not severe. On the sixth day in the hospital the dose of cortisone was reduced, and on the eighth day it was stopped. That evening the patient's temperature rose to 103 F, spasms became much worse, trismus was increased, and dysphagia was noted. Cortisone was started again, and symptoms gradually subsided. Urinary retention required catheterization, and there was a small infection of the right thigh. The patient was discharged after 24 days in the hospital. The total dose of cortisone was 837 mg.

Case 11 (Table 3).—A 17-year-old woman was admitted to the hospital complaining of stiff neck and trismus of 24 hours duration. She had a full-term normal delivery six days before the symptoms developed. Her temperature was 101.4 F, pulse 130 per minute, and respirations 38 per minute. She had generalized rigidity and marked opisthotonos with spasms seven hours after arrival on the ward. She was given routine therapy and oral cortisone. Her temperature fluctuated between 99 and 102 F for the first seven days. She had severe spasms for 5 days and mild spasms until the 15th day. At this time cortisone therapy was stopped. Trismus disappeared after 20 days. A cellulitis of the right thigh cleared without drainage, and she was discharged after 33 days in the hospital. The total dose of cortisone was 3,650 mg.

Case 12 (Table 3).—This 8-year-old boy was admitted with a history of lockjaw and stiff neck of 24 hours duration and a puncture wound of the sole of the right foot nine days previously. He had marked generalized rigidity and opisthotonos on admission with a temperature of 101 F, pulse of 156 per minute, and respirations of 34 per minute. Spasms developed within 30 hours of the first symptoms, and these remained severe for four days. Temperature dropped to normal, and the spasms became milder by the fifth day. The spasms disappeared on the 12th day and lockjaw on the 15th day. The patient was discharged one month after admission. The total dose of cortisone was 1,250 mg.

Table 6.—*Duration of Hospitalization in Fatal Cases*

Series of Patients	Total Patients	Fatal Cases	Death *1 Day*	Death *2 Day*	Death *3 Day*	Death *4 Day*	Death *5 Day+*
This Series							
Control............	20	17	3	6	3	1	4
Cortisone intramuscularly.......	5	5	0	3	2	0	0
Cortisone orally....	10	4	1	2	0	0	1
Hydrocortisone orally............	5	3	1	1	0	1	0
Remaining patients	56	10	4	4	1	0	1
Total..........	96	39	9	16	6	2	6
Previous Series							
Control............	10	7	2	3	0	0	2
Corticotropin......	10	4	2	2	0	0	0
Remaining patients	43	7	2	1	1	1	2
Total..........	63	18	6	6	1	1	4

Case 13 (Table 3).—A girl 6 years old was admitted because of stiff jaw and spasms coming on the same day after an interval of only three hours. She had an injury under the right thumb nail four days before becoming sick. On admission opisthotonos

and spasms were severe. The temperature was 100 F, pulse 110 per minute, and respirations 28 per minute. She had marked opisthotonos and severe spasms. She was given 200 mg. cortisone daily by mouth and then 150 mg. daily, but, when her temperature started to rise, the dose was increased. Then fever and spasms gradually subsided. There was a period of respiratory arrest on the sixth day with spontaneous recovery. Stiffness of the jaw disappeared on the 13th day, and she was discharged on the 25th hospital day. The total dose of cortisone was 1,600 mg.

CASE 14 (Table 3).—A girl 8 years old was admitted to the hospital four days after an injury to the sole of the left foot due to a thorn. She had lockjaw for one day and spasms for four hours before admission. Her temperature was 102 F, pulse 144 per minute, and respirations 34 per minute. She was given 400 mg. of cortisone on the first day in addition to the routine therapy. She improved, and the dose of cortisone was reduced to 200 mg. daily, after which she had a relapse with temperature to 107 F and severe spasms. She died on the fifth day due to circulatory failure. The total dose of cortisone was 1,400 mg.

COMMENT

It appears that the selection of severe cases was quite accurate since only 3 of the 20 control patients in this category recovered, while among the patients excluded from the study there were 46 survivors out of a group of 56. The low eosinophil count observed in the severe cases is consistent, since we had previously noted a correlation between the eosinophil count and severity of the infection.[8] In fact, on this basis the 40 cases in this study were severer than the 20 cases previously reported. This impression is confirmed by the fact that the average period of onset in this series was less than 22 hours, while the average period of onset in the previous series was 43 hours. Although other investigators have paid little attention to fever, we consider that it is an early manifestation of severe tetanus and of serious prognostic importance.[12]

The ability of adrenal hormones to control fever has been demonstrated in a variety of infections, but this does not necessarily indicate a beneficial action, and the use of these hormones may be associated with an acceleration or recrudescence of infection as in the case of tuberculosis.[13] In tetanus we see that cortisone and hydrocortisone like corticotropin were able to control fever in many of the cases, and it would appear that failure to prevent a rise in temperature in some instances was due to insufficient dosage. This suspicion is enhanced by the observation that fever sometimes occurred when the dose of cortisone was reduced and sometimes disappeared when the amount of hormone was increased.

The most surprising observation that can be made in this series of cases is concerned with the difference in the effect of cortisone that is given orally or is injected. Preliminary observations indicated that cortisone given intramuscularly was useful in tetanus when dysphagia was prominent, but the case involved was one that did not progress to the stage of convulsions.[14] Observations made when cortisone injections were given along with corticotropin suggested that such treatment led to an aggravation of convulsions. Nevertheless, five patients were given cortisone by this route in order to test the point. It is noteworthy that the clinical impression was confirmed by the early demise of these cases. On the other hand, when fever was controlled through the oral administration of cortisone or hydrocortisone, the frequency and intensity of spasms was reduced and this effect was noted even in cases in which slight fever persisted. It is plausible that orally administered cortisone is converted into hydrocortisone to a greater extent than the parenterally administered hormone, which might account for the difference in action. But sufficient hydrocortisone for parenteral administration was not available to test this hypothesis.

In comparing the number of survivors in the control series with the number of recoveries in the group given cortisone orally the difference between 15 and 60% is statistically significant and consistent with the figures previously reported when corticotropin was used (table 6). Furthermore, all of the survivors in the group of 20 controls were children, while in the treatment series adults are included among those who recovered.

In the absence of toxic effects we have no hesitation in recommending the use of orally administered cortisone in large doses at frequent intervals in the management of severe tetanus. Because of the relative ease of administration as well as a more prompt action, it is preferable to intravenously administered corticotropin.

SUMMARY

Forty patients with severe tetanus, on the basis of trismus, convulsions, fever, and a short period of incubation or onset, were selected for study. The average period of onset was less than 22 hours. Basic therapy given to all patients included two intramuscular injections of 120,000 units of antitetanus serum, daily injection of 400,000 units of penicillin, intramuscular administration of paraldehyde and such supportive measures as were indicated. Half of the patients were also treated with adrenal hormone. Cortisone was injected in 5 patients and given orally to 10, while hydrocortisone was given orally to 5 others. The administration of adrenal hormone was usually correlated with a drop in temperature and a fall in the pulse and respiratory rate. Fever often recurred when the dose of cortisone was reduced, and in some cases the fever did not respond to the dosage used. When cortisone was given intramuscularly, there seemed to be an aggravation of muscular spasms, but, when cortisone or hydrocortisone were given orally, there was a diminution in the intensity and severity of the convulsions. Among the 20 controls there were 3 survivors. None of the patients receiving injections of cortisone recovered, while 2 out of 5 patients getting hydrocortisone and 6 out of 10 patients getting cortisone by mouth recovered. Results obtained with cortisone administered orally are statistically significant and consistent with clinical observations as well as with previously reported beneficial effects obtained with corticotropin.

---

[12] A Controlled Study of Adrenal Hormone in Severe Tetanus, read before the 139th Meeting of the Staff Society of Seth G. S. M. College and K. E. M. Hospital, March 13, 1954.

[13] Cortisone, Corticotropin, and Tuberculosis, editorial, J. A. M. A. 149:1474 (Aug. 16) 1952.

[14] Satoskar, R. S.: Tetanus and Its Management: Kasanji Ranchhodji Desai Prize Essay, Seth G. S. M. College, Nov. 13, 1953.

ADDENDUM

Since this manuscript was prepared, our attention has been drawn to an account of three patients with tetanus who were treated with injections of cortisone.[15] In none of these cases was an incubation period of less than 7 days or a period of onset of less than 48 hours recorded. All patients recovered, and in the patients receiving the largest dose of injected cortisone the spasms were worse during the first five days of treatment. These observations are compatible with our conclusions that, although cortisone has a beneficial action in tetanus, it must be given orally to have a favorable effect on spasms.

Meanwhile we have administered cortisone orally to 10 more patients with puerperal tetanus and have had good results. For comparison there were 103 patients with puerperal tetanus treated in this hospital during the period 1943-1953 with a mortality of 62%. Since the advent of hormonal therapy we have treated in all 12 patients with puerperal tetanus with a mortality of 25%.[16]

[15] *Cossali, C.*, and *Biella, A.*: Cortisone in the Treatment of Tetanus, Minerva Med. 44: 1435-1437 (Nov. 14) 1953.

[16] *Dave, B. T.*, and others: Puerperal Tetanus Treated with Cortisone, *Gosumec's M. J.*, to be published.

EMOTIONAL ASPECTS OF RESPIRATORY DISORDERS AMONG COAL MINERS

W. Donald Ross, M.D., Lee H. Miller, M.D., H. Halbert Leet, M.D.
and
Frank Princi, M.D., Cincinnati

In the course of referrals of a number of patients with chest complaints, we have had an opportunity to make a comprehensive appraisal of coal miners apparently incapacitated by respiratory complaints of "smothering," shortness of breath, cough, and chest pain. Our observations have indicated that emotional factors were of considerable importance in these cases regardless of the presence or absence of organic disease. These studies demonstrate the need for more attention to the personal situation of the coal miner who presents himself with respiratory symptoms. This report is based on medical and psychiatric studies of 40 patients, 30 of whom were interviewed by the same psychiatrist.

INVESTIGATIVE PROCEDURES

Each patient was studied over a period of three to six weeks. The protocol of investigation included case history, physical examination, urinalysis, complete blood cell count and hematocrit, determinations of sedimentation rate, serologic tests for syphilis, blood nonprotein nitrogen, fasting blood sugar, sputum examination, chest roentgenograms (posteroanterior inspiratory, expiratory, and lateral views), chest and heart fluoroscopy, electrocardiogram, measurement of circulation time, cardiological consultation, spirogram, pneumotachogram, and determinations of lung volume, arterial blood gases, and maximum breathing capacity. Tolerance for exercise was studied by direct observation of the patient while he was walking up four flights of stairs when possible, and by resting and exercise measurements of minute ventilation, oxygen consumption, carbon dioxide production, respiratory quotient, oxygen ventilation and carbon dioxide equivalents, dyspnea indexes, blood oxygen saturation, and blood carbon dioxide content.

Emotional factors became apparent during daily observation of the patients by the medical, nursing, and technical staff. Some of the conclusions concerning emotional factors have been mentioned in a previous report by one of us.[1] During previous studies, psychiatric consultation had been obtained only when the symptoms were not explained by physical findings, but for the 40 patients reviewed in this report psychiatric consultation was routine. A psychiatrist interviewed each patient as one of the group of physicians who participated in the complete appraisal. One of the psychiatrists, who had also studied coal miners referred to a psychiatric clinic in Kentucky, observed that patients seen as part of the regular procedure of an examination were less defensive and more ready to volunteer information on personal and social problems than patients who had been referred for special psychiatric consultation. The 30 patients seen by the same psychiatrist provide the most satisfactory material, from the aspect of uniformity and comparability, on psychiatric diagnosis and psychodynamics. The procedure of the interview was that of an "associative anamnesis," [2] with supplementary questioning to define the psychiatric diagnosis and to elicit comparable information for all patients. Personal events that had been followed by an increase in symptoms were noted particularly. Psychodynamic formulations were made from the sequence of associations, both spontaneously and in response to questioning, and in the perspective of the life history, including early memories and dreams.

MEDICAL CONCLUSIONS

Since this report is concerned essentially with the role of emotion in these cases, the details of the physiological data will not be discussed here. The final medical conclusions concerning the most significant diagnosis for each patient are summarized in table 1. These conclusions were reached by the physicians who carried out the physiological and medical investigations after consideration of reports of psychiatric consultations and other medical data. A psychoneurosis of some type was considered to be the most significant diagnosis in one-third of the patients. By combining the number of patients with psychoneurosis as the most significant medical diagnosis with the number of patients with miscel-

---

From the Kettering Laboratory in the Department of Preventive Medicine and Industrial Health, and the Department of Psychiatry, College of Medicine, University of Cincinnati.

[1] Princi, F.: Industrial Medical Aspects of Chest Diseases of Occupational Origin, J. A. M. A. 150: 1173 (Nov. 22) 1952.

[2] Deutsch, F.: (*a*) Associative Anamnesis, Psychoanalyt. Quart. 8: 354, 1939; (*b*) Applied Psychoanalysis: Selected Objectives of Psychotherapy, New York, Grune & Stratton, Inc., 1949.

laneous (nonrespiratory) diseases, one finds that 40% of the patients were not considered to have a respiratory disease as the most significant medical diagnosis. This does not mean that the respiratory symptoms were imaginary. Spirographic studies frequently revealed disorders of breathing that have been found to accompany anxiety and other types of emotional tension.[3] Many of the patients with pneumoconiosis, emphysema, or bronchitis and bronchiolitis and almost all of the patients with bronchial asthma had emotional factors contributory to their disability. It has been said of silicosis that with few diseases is the psychological approach more important.[4] There may even have been emotional factors antecedent to organic changes in cases of emphysema without bronchial asthma or other respiratory diseases, and bronchial asthma is certainly known to involve important psychosomatic aspects. Abnormally low blood oxygen content, when present, and the consequent cerebral anoxia may have contributed to the psychiatric difficulties and to a vicious circle in some of the patients with both "physical" and "psychiatric" disability.

TABLE 1.—*Most Significant Medical Diagnosis*

Diagnosis	No. of Cases	%
Psychoneurosis	13	32.5
Pneumoconiosis	11	27.5
Emphysema	6	15.0
Bronchial asthma	6	15.0
Bronchitis and bronchiolitis	1	2.5
Miscellaneous (heart disease, trachoma, hypertrophic arthritis)	3	7.5
Total	40	100.0

As to nature of disability—whether physical, psychiatric, or both—5 patients, or 12.5%, had physical disability but no psychiatric disability; 14, or 35%, had psychiatric disability but no physical disability; 21, or 52.5%, had both psychiatric and physical disabilities. Thus psychiatric factors contributed to disability in 87.5% of cases, more than half of the patients had both physical and psychiatric disabilities, and the percentage of patients whose disability was entirely psychiatric was almost three times that of patients whose disability was purely physical. Whatever the psychosomatic and somatopsychic sequences, the conclusions concerning the most significant diagnosis and the nature of the disability indicated the importance of an understanding of the personal history and the life situation of a coal miner with chronic respiratory symptoms.

PSYCHIATRIC FINDINGS

The psychiatric diagnoses for the 30 patients interviewed by the same psychiatrist are presented in tables 2 and 3. More than half were considered to have mixed psychoneuroses with combinations of the features itemized in table 3. Depressive and anxiety features predominated, with a variety of other neurotic and borderline psychotic features existing concomitantly. It is to be noted that some form of neurosis was present in 93.3% of these 30 cases even though only 32.5% of all 40 patients were considered to have psychoneurosis as the most significant medical diagnosis. Tables 4, 5, and 6 summarize the psychodynamic formulations, the personal events that had been followed by increase in symptoms, and the outstanding characteristics of the childhood histories. The number of these features and events adds up to more than 30 because more than one feature was often noted for each patient.

The material behind these summaries can be described dynamically by a composite reconstruction of the life stories that are represented. Most of these patients had been brought up in large families in rural Kentucky. Most of their fathers were farmers; some were miners or storekeepers. Their education had been neglected because of the economic needs of the family. In retrospect they felt bitter because they had forfeited opportunities that had been enjoyed by siblings or others. Their earliest memories revolved around economic deprivation, hard work, births of siblings, fighting among siblings, or a death in the family; the last was a frequent precursor of later pathological grief reactions.

These men had started to work in the mines in their teens and had continued to contribute to the support and schooling of younger siblings, or they had married young and soon had several children of their own to support, with hopes that their children would eventually support them. They were aware of the hazards to life and limb in the mines but had worked hard in the face of these hazards to earn good pay in order to give their children better opportunities and had succeeded for many years in repressing anxiety about the dangers of their work. Many of them appeared to have been overcompensating for their own frustrated dependent wishes in the emphasis that they placed on what they were able to do for their children. They utilized reaction formations against resentments of rivals and expressed their aggression in hard work, after abandoning the direct aggressions of drinking and fighting in which some of them had indulged in earlier years.

TABLE 2.—*Psychiatric Diagnoses in Thirty Patients*

Diagnosis	No. of Cases	%
Mixed psychoneurosis	17	56.6
Depressive neurosis	5	16.6
Anxiety neurosis	2	6.6
Traumatic neurosis	2	6.6
Conversion hysteria	1	3.3
Organ neurosis	1	3.3
No psychiatric disability	2	6.6

TABLE 3.—*Features in Mixed Psychoneuroses in Seventeen Patients*

Feature	Occurrence	
	No.	%
Depressive	13	76.5
Anxious	8	47.1
Conversion	6	35.3
Organ neurotic	5	29.4
Hypochondriacal	5	29.4
Traumatic neurotic	1	5.9
Schizoid	3	17.6
Paranoid	1	5.9

Over the years they had lived through a number of explosions or slate falls that had killed or maimed other miners with whom they had been closely associated. Many of them had been involved in futile attempts to rescue a fellow worker and had participated in removing the body or notifying the family. They had survived minor accidents and narrow escapes. After these experiences they had anxiety dreams of cave-ins and other catastrophies. On awaking from such dreams, or while at work, they began to have shortness of breath, choking sensations, and spasms of coughing, sometimes accompanied by chest pains, fatigue, and weakness. These symptoms often came on or were aggravated after deaths in the family. These miners appeared to be particularly prone to pathological grief reactions involving unconscious guilt over the death of a mining confrere or some member of the family, while they continued to survive; for example, many patients admitted that a death had been a great "blow" but that they had not let themselves think about the deceased thereafter; dreams or reactions at other funerals indicated that their feelings had not been "worked through." In some patients symptoms had developed from identification with someone who was sick or injured, and they regressed to a dependent state that protected them from the risk of exposure to a fate they were unconsciously expecting. Most adhered to the cultural pattern of conscious denial of fear of mining experiences. Many continued to work until they were examined by a physician (frequently during an acute respiratory infection or an unrecognized anxiety attack) and told that they were incapacitated. The cessation of work on this basis, or because of a strike or a mine shutdown, meant the loss of an outlet for aggression in hard work, and they became more depressed and more incapacitated. Sometimes other personal problems, such as financial losses, marital difficulties, or disappointments in children who went away from home or failed to contribute to the support of the family, had precipitated or aggravated their symptoms.

---

[3] Christie, R. V.: Some Types of Respiration in the Neuroses, Quart. J. Med. 4:427, 1935. Finesinger, J. E.: The Spirogram in Certain Psychiatric Disorders, Am. J. Psychiat. 100:159, 1943. Stevenson, I., and Ripley, H. S.: Variations in Respiration and in Respiratory Symptoms During Changes in Emotion, Psychosom. Med. 14:476, 1952.

[4] Sander, O. A.: Silicosis in Current Therapy: Latest Approved Methods of Treatment for the Practicing Physician, Philadelphia, W. B. Saunders Company, 1953, pp. 101-102.

TABLE 4.—*Psychodynamic Features in Thirty Patients*

Feature	Occurrence No.	Occurrence %
Anxiety about mining hazards	18	60.0
Grief reactions	10	33.3
Overcompensation for frustrated dependent wishes	9	30.0
Regression to dependency	8	26.6
Identification with sick or injured persons	6	20.0
Resentments of authority	3	10.0

TABLE 5.—*Personal Events Followed by Increase in Symptoms in Thirty Patients*

Events	Occurrence No.	Occurrence %
Serious accidents or deaths of other miners	21	70.0
Accidents of their own	17	56.6
Deaths in the family	16	53.3
Statement of incapacity by physician	13	43.3
Narrow escapes from accidents	4	13.3
Cessation of work from mine shutdown or strike	3	10.0
Other major events	13	43.3

TABLE 6.—*Features of Childhood Background in Thirty Patients*

Feature	Occurrence No.	Occurrence %
Hard work to help support siblings	14	46.6
Deaths in family	9	30.0
Feeling deprived in comparison with others	8	26.6
Much fighting among siblings	4	13.3
Youngest in large family	2	6.6
Fears of father	2	6.6
Fears of mother	1	3.3
Parents separated	1	3.3

When first seen by us, these patients were middle aged or older (mean age 50, range 36 to 64) and had been having symptoms for 3 to 10 years, with inability to work for 1 to 2 years. Many were recipients of grants-in-aid from the United Mine Workers' Welfare and Retirement Fund, but most of these were unhappy about their dependent status and unaccustomed inactivity. At an early stage of their illness most patients had been able to work on the small plot of ground they might have bought with their savings. They might have been capable of working in some other employment, if such had been available, or if they had had insight into the emotional stress incurred by working in the mines, but most of them considered mining the only occupation for which they were suited. When they became unable to work in the mines, they felt that they were quite incapacitated for any physical labor, and they lost their initiative for other employment, showing secondary phenomena of regressive invalidism. The picture was like that of a combat veteran in war who has "had it" after prolonged battle stress and deaths of his "buddies," but who could, nevertheless, be rehabilitated for noncombat duty or civilian life by psychiatric treatment and therapeutic occupation.

COMMENT

Reports from England and Scotland have pointed to the importance of psychoneurotic and psychosomatic factors in the incapacities of underground coal miners.[5] Halliday found that 64% of miners were incapacitated for psychoneurotic and psychosomatic reasons, in contrast with 38% of nonminers, in consecutive examinations of 200 of each group who were receiving sick benefits. Post reported a full range of neurotic and psychotic disorders among miners seen at a psychiatric hospital, with a predominance of anxious-depressive psychoneurosis (30%) and depressive psychosis (18%). Halliday reported the diagnoses of anxiety states, anxiety-hysteria, and hysteria for miners seen for health insurance examinations presenting somatic complaints involving the respiratory, cardiovascular, gastrointestinal, and locomotor systems. Wiesel and Arny have described a "miner's syndrome" among eastern Kentucky miners past the age of 40, characterized by numerous somatic complaints, a passive, dependent attitude, and an outstanding lack of anxiety, with rationalizations based upon having been exposed to "bad air" and hard work, and "nerves being run down."[6] Younger patients, on the other hand, showed conscious anxiety and fear of occupational dangers.

Causative influences have been attributed to fear of accidents,[7] fear of disease,[8] and changing working and social conditions.[9] In Post's series the working conditions were considered to be the main causative factors in 28% of cases, although 58% of the miners themselves put the blame on their work, and 41% of them were confirmed in that belief, initially, by the opinions of their physicians. Nonoccupational factors were considered to be the main causes in more than half of the cases. Accidents had precipitated the illness in one-third of the cases, the prospect of returning to a dangerous environment being an important factor. A persistent fear of hazardous conditions was present in 41% of the patients.[5d] Dreams of mine accidents, sometimes after a particular accident, indicated unconscious fear of accidents.[5c] Statements by physicians frequently confirmed the miner's own feelings of incapacity.[10] Mechanization of the mines, with changed working conditions involving less personal interest in the work and less ability to hear warning signs of cracking strata because of the noise of the machinery, has been stressed.[5a] The changing social conditions in relation to Kentucky miners have been described in detail by Wiesel and Arny, who have emphasized the miners' previously strong familism and their more recent greater contact with the outside world, resulting in dissatisfaction with their lot.[6] Similar social changes appear to have influenced Scottish coal miners.[5c] Chronic neuroses and depressed and melancholic states of mind were noted to follow unemployment through layoffs.[5b] Welfare benefits for illness have been discussed as fostering a dependent attitude in retreat from the hazards of work.[6]

---

[5] (*a*) Dickson, D. E.: The Morbid Miner, Edinburgh M. J. **43**:696, 1936. (*b*) Brock, R. S.: A Study of Miners' Nystagmus, Brit. M. J. **1**:443, 1938. (*c*) Halliday, J. L.: Dangerous Occupation; Psychosomatic Illness and Morale: A Study Based on the Investigation of Incapacitation Disorders in Underground Miners, Psychosom. Med. **5**:71, 1943. (*d*) Post, F.: A Study of Psychiatric Illness in Coal Miners, J. Ment. Sc. **92**:574, 1946. (*e*) Heron, A., and Braithwaite, D.: Emotional Stability in Colliery Workers, Brit. J. Indust. Med. **10**:27, 1953.

[6] Wiesel, C., and Arny, M.: Psychiatric Study of Coal Miners in Eastern Kentucky Area, Am. J. Psychiat. **108**:617, 1952.

Our findings have been in essential agreement with these reports, with particular aspects being highlighted owing to the specific characteristics of our group of miners and our attempt to understand the individual psychodynamics, granting that environmental and social factors have been in operation. Our patients with respiratory symptoms did not have as wide a range of psychiatric disorders as those with "psychiatric illness" described by Post nor as wide a variety of symptoms as those reported by Halliday or by Wiessel and Arny. We noted a predominance of depressive reactions, associated with dissatisfaction about being dependent upon the welfare fund instead of being actively productive, but also associated with inhibitions for returning to work because of unconscious fears of real hazards and depressive expectations of catastrophe.

The development of this situation is easily understandable from both the life history and the environmental circumstances. These miners had worked hard in overcompensation for childhood deprivations. They had been oversolicitous for other miners and other members of their families, in reaction formation against the rivalries of their childhood. After deaths of other miners or of other members of their families and after accidents or narrow escapes, they unconsciously expected to be killed. When a diagnosis of physical disease was made by a physician, they took refuge in their symptoms to avoid further risk, but the cessation of work deprived them of an outlet for the aggressive impulses that had been behind the entire sequence.

SUGGESTIONS FOR PREVENTION AND TREATMENT

Our understanding of the development of these disorders leads us to certain suggestions for medical and social measures to interrupt the sequence leading to incapacity, unhappiness, and nonproductivity. Improvement in mine safety is one measure to which attention is being given. The recognition by physicians of the importance of emotional factors in the respiratory symptoms of miners at an early stage of the disorder would open up possibilities for the treatment of the disorder before a return to mining was out of the question. A diagnosis based on inadequate historical, physiological, and roentgenographic evidence can do much harm by needlessly reinforcing the patient's belief of physical incapacity. Many of these men, if assessed carefully, both physically and psychologically, might be returned to mining after treatment for traumatic anxiety or grief reactions along the lines of treatment of acute neuropsychiatric battle casualties. Others might be unable to return to underground mining but might be rehabilitated in some other employment if help were given them to understand the nature of their fears and if prospects for other employment were provided before the patients became fixed in a belief that they could not engage in any productive activity. One of us (H. H. L.) has had encouraging results with these patients from individual psychotherapy, group therapy, and rehabilitation measures.

Physicians who deal with miners can improve in the recognition and handling of these problems; however, employers and unions have a responsibility for opening up earlier opportunities for treatment and for rehabilitation at less hazardous occupations if improvement in medical care is to result in solution rather than mere elucidation of the problem. Finally, an educational program among miners concerning the psychological and physiological reactions to the stresses of their occupation would help to reduce the disabilities that are developing at present.

SUMMARY

In medical and psychiatric studies of 40 coal miners with respiratory symptoms, 30 of whom were interviewed by the same psychiatrist and 10 by other psychiatrists, psychoneurosis was the most significant diagnosis in one-third of the patients. Important psychosomatic factors appeared to be contributing to clinical manifestations of pneumoconiosis, emphysema, and bronchial asthma. Only 12.5% of patients had disability on "physical" grounds alone; 35% had disability on "psychiatric" grounds alone, and 52.5% on both physical and psychiatric grounds. Depressive and anxiety features predominated. Consideration of psychodynamics, personal events, and childhood background contributed to the understanding of the development of incapacity of these miners, whose attitude toward their hard work and its serious hazards, augmented by fatalities among their associates in the mines, by their own experience of accidents, or by deaths in their families, led them to expect catastrophe for themselves. They had regressed to dependency on being provided with a physical diagnosis, but their depression and insecurity had increased with the cessation of work and the loss of an outlet for aggression.

Department of Psychiatry, Cincinnati General Hospital (29) (Dr. Ross).

---

7. Dickson,[5a] Halliday,[5c] and Post.[5d]
8. Princi[2] and Halliday.[5c]
9. Dickson,[5a] Halliday,[5c] and Wiesel and Arny.[6]
10. Princi[2] and Halliday.[5c]

J.A.M.A., Oct. 2, 1954

INITIAL CARE OF THE SEVERELY WOUNDED

Lieut. Col. Curtis P. Artz (MC), U. S. Army
and
John M. Howard, M.D., Houston, Texas

Recent reports on the management of mass casualties in civilian disasters, such as the Waco, Texas, Worcester, Mass., and Flint, Mich., tornadoes[1] and the increased interest in civilian defense emphasize the importance of care of the severely wounded by the civilian physician. In preparing for the world of tomorrow, the civilian physician should familiarize himself with techniques of management of large numbers of wounded men. It is believed that the experiences gained from the study of combat casualties in Korea offer lessons that are applicable to civilian injuries as well as to battle wounds. The role of the company aid man may be likened to that of the ambulance attendant and the role of the battalion surgeon to that of the physician who first sees the patient. The type of care in the preoperative section of a forward surgical hospital is similar to that given in the emergency room of a civilian hospital. One of the primary aims in the initial care of the wounded man is resuscitation. Resuscitation may be considered as any procedure carried out to counteract the effects of the wound, such as tracheotomy for obstruction of the airway, administration of blood for blood loss, and splinting of fractures to prevent pain and further injury. The wound is a continuing insult to the body; therefore resuscitation must be a continuous series of corrective procedures.

FIRST AID

The aid man, whether he is a civilian ambulance attendant or a company aid man on the battlefield, begins [illegible] initial phase of resuscitation. Hemorrhage can be controlled in most instances by a firm pressure dressing, but in some cases application of a tourniquet may be necessary. To prevent further contamination and as an extra precaution, a firm pressure dressing should be put over the wound at the same time a tourniquet is applied. Unconscious patients should be turned on their side, and the tongue pulled out to insure an adequate airway. An occlusive dressing must be applied to a sucking wound of the chest. Splinting of fractures relieves pain and prevents further injury at the fracture site. Severely injured patients experience little pain, therefore narcotics should be avoided whenever possible, especially in patients who have craniocerebral injuries or chest injuries and in patients who are hypotensive.

Early in the Korean conflict, the company aid man carried small bottles of albumin for administration during the litter carry to the aid station. When dextran became available in plastic bags, the aid man carried three or four of these units on patrol. The infusion could be hastened by merely squeezing the plastic container. Battalion surgeons emphasized the importance of administering a plasma expander as soon as the casualty was seen. Although severe blood loss may not be evident immediately after injury, a blood volume deficiency will usually occur after severe wounding; hence immediate restoration is indicated.

CARE BY THE FIRST PHYSICIAN

The physician who first sees the patient is not merely a first aid man but an important member of the resuscitative team. The care that he gives is of an emergency type, but he must take time to institute initial procedures that will prepare the injured patient for transportation to the nearest hospital. Since injured patients have a great deal more fear and anxiety than true pain, it is important that an attempt be made to alleviate this fear by reassurance. Often a simple explanation by the physician that the wounds do not threaten life or limb, and that a small amount of pain can be tolerated, will bring gratifying relief. The restlessness of an injured patient is frequently due to hypovolemia or hypotension. This is a response due not to pain but actually to cerebral anoxia. As soon as his circulatory status improves, the patient becomes quieter. When true pain is present, a narcotic should be administered intravenously. All wounds should be inspected for control of hemorrhage. If a tourniquet has been applied, it should be examined carefully. Not infrequently when the aid man applies a tourniquet as an emergency procedure, further evaluation by the medical officer will show that a pressure dressing will be sufficient. Respiratory obstruction commonly accompanies severe maxillofacial, head, and chest wounds. If there is doubt as to the adequacy of the airway, a tracheotomy should be performed before further transportation is attempted. Sucking wounds of the chest must be closed; blood or air in the chest may be removed by thoracentesis; cardiac tamponade can be relieved by the insertion of a needle into the pericardial sac.

A severely wounded patient's chance for survival can be greatly enhanced by the infusion of two or three units of a plasma expander prior to transportation. Hurried evacuation may lead to undue deterioration during transportation. The importance of a short interval of time between injury and admission to a hospital is well recognized, but a slight delay for further restoration may be warranted because the patient may be better prepared to withstand transportation. The commonest mistakes in care prior to the patient's admission to a hospital are inadequate splinting, overdosing with morphine, and evacuation without proper preparation.

From the Surgical Research Team in Korea, Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington, D. C. Presently assigned as Director, Surgical Research Unit, Brooke Army Medical Center, Fort Sam Houston, Texas (Colonel Artz). Assistant Professor of Surgery, Baylor University College of Medicine, Houston, Texas (Dr. Howard).

Read before the Section on Military Medicine at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 23, 1954.

[1] Jaworski, H. L.: The Waco Tornado Disaster, Am. J. Surg. 87:484, 1954. Dunlop, G. R.: The Worchester Tornado, ibid. 87:487, 1954. Curry, G. J.: The Flint Tornado, ibid. 87:489, 1954.

INITIAL HOSPITAL CARE

As soon as the injured man arrives at the hospital, the surgeon should evaluate his condition and prepare him for the necessary operative procedure. A record should be kept of the findings of the initial examination, particularly of the extent of vascular, nerve, and bone involvement, as well as blood pressure and pulse rate. All injured patients should receive tetanus antitoxin or a booster dose of toxoid. Antibiotics should be given to aid in the prevention of infection. The amount and type of antibiotic therapy may vary according to current concepts of practice. Because of poor absorption in injured patients after oral and intramuscular administration, the intravenous route of injection is preferred. Nasally administered oxygen is indicated if cyanosis is present or if there is difficult respiration or massive blood loss.

Blood volume deficiency should be remedied as rapidly as possible. Blood should be given through a 15 or 17 guage needle. If a large amount of blood replacement is anticipated, it is wise to expose surgically an accessible vein and tie in a cannula. When it is difficult to find a suitable vein, a 13 guage needle may be inserted into the femoral vein and a long segment of plastic tubing threaded into the inferior vena cava. The needle can be removed and the plastic tubing allowed to remain in place. This tubing should be removed as soon as possible, since thrombi may form and give rise to complications. Rapid infusion is commonly carried out by pumping air into the bottle of blood, but air embolism is a grave, inherent danger. During 1952 and 1953 in Korea, five deaths were recorded from this procedure as the result of air embolism. Low titer, group O blood without cross matching was used almost exclusively in the Korean conflict and was found to be most satisfactory. The incidence of appreciable reactions was negligible.

It is most difficult to decide when a patient's blood volume has been increased to the extent that he can best tolerate anesthesia and surgery. The value of adequate preparation for operation has frequently been emphasized in elective surgery. In the surgery of trauma, it is even more important to prepare the patient by restoring his blood volume before operation. Unless continued hemorrhage is present and operation is mandatory to control this hemorrhage, the blood volume should be increased to near normal levels. Frequently blood requirements may be judged by the size and character of the wound. In the absence of hemothorax and pneumothorax, injury to the central nervous system, or anoxia from blockage of the respiratory passages, hypotension usually means a deficiency in blood volume.

The surgeon's guides to the adequacy of restorative treatment consist of general appearance of the patient, color of the conjunctiva, blood pressure, pulse rate, and output of urine. If sufficient blood has been provided to permit good peripheral circulation, it will be indicated by the blood pressure. The adequacy of visceral blood flow can be estimated by the rate of flow of urine. In a severely wounded patient, a catheter should be inserted into the bladder in order to observe the output of urine. A urine flow of 30 cc. or more per hour suggests that the circulatory volume is approaching normal. A patient is usually ready for operation when his systolic blood pressure reaches 110 mm. Hg and his pulse rate has fallen to 120 per minute. When the systolic blood pressure reaches 100 or 110 mm. Hg, the patient may be moved to the x-ray room or to the operating table. If he is resuscitated adequately, the movement will not cause a deterioration of his condition. On the other hand, if he has an appreciable blood volume deficiency, a fall in blood pressure will occur when he is moved.

Since most patients are able to compensate for a certain degree of blood volume deficiency by vasoconstriction, normal blood pressure does not always mean an adequate volume restoration. Tilting the patient with his head up tends to abolish compensatory mechanisms. A simple tilt test offers an additional criterion by which the surgeon can judge the adequacy of preparation for surgery.[2] If the patient's head is tilted upwards 30 degrees and his blood pressure falls and his condition deteriorates rapidly, this is good evidence that restoration of blood volume has been inadequate. If sufficient transfusions have been carried out, however, the patient can probably withstand, for 10 minutes, tilting of his body to a 30-degree angle with his head up. In questionable cases, this simple test helps to determine the adequacy of circulation.

In some instances, a surgeon may observe that hemorrhage is occurring as rapidly as blood is being replaced. In such cases, blood should be added through two or three veins, and the patient should be placed on the operating table immediately. As soon as hemorrhage is controlled at operation, further manipulation should be deferred until blood volume deficiency has been restored. Concealed hemorrhage in the abdomen or chest may be the cause of failure of response in a patient. Careful attention should be given to the size of the abdomen when there is a wound in that area. A rapidly expanding abdomen may mean serious intra-abdominal hemorrhage. Severe hypotension may be caused by air or blood in the chest. Cardiac tamponade and tension pneumothorax have a grave prognosis and must be alleviated immediately. Preoperative roentgenograms should be taken when indicated. All patients with abdominal wounds should have an intragastric tube and a urinary catheter inserted prior to operation.

CARE IN THE OPERATING ROOM

Patients who have wounds of the abdomen, chest, or arteries should have two large needles or cannulas well anchored in veins during operation so that blood can be given through multiple portals if necessary. The surgeon should always be near the patient during the induction of anesthesia because of the possibility of cardiac arrest, a not uncommon occurrence in severely wounded patients who have suffered varying degrees of anoxia. During the last six months of the Korean conflict, 14 cardiac arrests were reported in forward hospitals. All but two of these patients died.

In patients injured in many different parts of the body, it is necessary to determine priority for the site of operation. The area of massive hemorrhage should receive attention first; thereafter priority should be given to the chest, abdomen, head, and extremities, in that order. It may be necessary occasionally to perform the highest priority surgery and then, because of the patient's poor condition, delay surgery of the head and extremities until general improvement occurs. During the operative procedure, the surgeon must estimate constantly the amount of blood the patient is losing as a guide to replacement therapy. When several areas are injured, there is a constant oozing until the initial surgery is completed. To minimize blood loss, the operation should be performed as expeditiously as possible. In patients with multiple wounds, two surgical teams may work in different areas in order to lessen the period of anesthesia and operation. As the endotracheal tube is removed at the termination of the operative procedure, the airway should be cleared. If there has been any question as to aspiration of vomitus, bronchoscopy should be performed.

---

[2] Artz, C. P.: The Use of the Tilt Test for Estimation of Blood Volume Deficiency, Report of Surgical Research Team in Korea, Washington, D. C., Army Medical Service Graduate School, Walter Reed Army Medical Center, 1954.

CARE AFTER OPERATION

Continued restoration and careful observation of the patient during the postoperative period is the phase of care that is most easily overlooked. Too frequently the surgeon who feels that he has restored the patient's blood volume and performed an adequate procedure expects the patient to recover uneventfully without further therapy. It is imperative that the patient be examined frequently for evidence of blood loss, atelectasis, and other chest complications. Frequent observations of the blood pressure and hourly measurements of the urine are essential guides to therapy. A patient who is hypotensive after operation and does not excrete urine probably has a blood volume deficiency, and further replacement is required. In a study of severely wounded men in Korea, 18 of the 61 who required from 5 to 10 pt. (2,365-4,730 cc.) of blood in the first 24 hours were given more than a pint of blood postoperatively. Of the more severely wounded group of 77 men who required from 10 to 56 pt. (4,730-26,488 cc.) of blood, more than half received over 2 pt. (946.3 cc.) of blood in the immediate postoperative period.[3] Continued oozing has been observed in patients who have received massive quantities (from 18 to 20 pt. [8,514-9,460 cc.]) of stored blood. It is not known what deficiency in stored blood prevents normal clotting. Sometimes this deficiency can be replaced by fresh blood. In one patient treated in Korea, severe oozing occurred after the administration of 39 units of stored blood.[4] This oozing ceased after 6 pt. (2,838 cc.) of fresh blood had been given. The patient recovered.

Hypotension after operation may be caused by a dilated stomach or a distended bladder. Acute dilatation of the stomach postoperatively is not uncommon after severe injury since overdistention of the stomach frequently follows the use of intranasal oxygen. As soon as the patient's blood volume is restored to near normal levels as evidenced by a normal blood pressure and the start of urine flow, electrolyte solutions and water should be given.

USE OF PLASMA VOLUME EXPANDERS

Although infusions of whole blood are the ideal treatment for blood loss following injury, some type of solution may be required to expand plasma volume before whole blood is available. In the early part of the Korean conflict, lyophilized pooled plasma and albumin were used as emergency replacement solutions. Plasma had three distinct disadvantages: (1) the risk of homologus serum hepatitis; (2) delay for reconstitution; and (3) breakage caused by freezing of many of the bottles of water, particularly during the winter months. During the last few months of the war, dextran replaced plasma. Over 4,000 units of dextran were used without reaction or clinical evidence of increased hemorrhage. It was used primarily in areas forward of the surgical hospital. It was difficult to determine exactly how long the dextran maintained the plasma volume expansion. On the other hand, it was clinically evident in Korea (average evacuation time of three and one-half hours) that the dextran given prior to admission maintained the plasma volume for the period of transportation to the hospital. Dextran is particularly useful in civilian emergency rooms because it can be immediately infused while waiting for blood to become available. Likewise, it should prove of particular value in industrial plant dispensaries for emergency use in case of severe accidents. It is easily administered during transportation of the patient to a hospital.

When adequate quantities of whole blood are not available, it may be necessary to carry out restoration by the administration of a plasma volume expander. From experience in Korea, it appears that patients may be treated safely with dextran and conservative quantities of whole blood. In a patient who requires from 1,000 to 1,500 cc. of replacement fluids in the first 24 hours, complete resuscitation may be carried out safely by the administration of dextran. The patient's hematocrit will fall to a low level, but the anemia may be corrected by whole blood administered at a later date. In patients who required from 1,500 to 4,000 cc. of replacement fluids, dextran and blood may be given in a ratio of 1:1. For patients requiring from 4,000 to 7,000 cc. of fluid, dextran may be given in the ratio of 1 unit of dextran to 2 units of blood. In the most severely wounded, a maximum of 2,500 or 3,000 cc. of dextran should be given, and the remainder of the replacement fluid should be whole blood.

USE OF MASSIVE TRANSFUSIONS

The greatest single difference between the management of wounded men in Korea and those in World War II appears to be the massive quantities of blood administered throughout the various treatment periods. It is difficult to make an accurate comparison of mortality rates in Korea with those of World War II because it is almost impossible to find reports on comparable groups. In a series of 1,085 men wounded abdominally who were treated by the Second Auxiliary Surgical Group during World War II and were operated on within seven hours after injury, the mortality rate was 20.5%.[5] At the 46th Surgical Hospital in Korea, among a series of 284 abdominally wounded persons who were admitted and operated on within an average of seven hours after injury, the mortality rate was 10.7%.[6] The lower mortality rate in Korea may be due to several factors. These include a shorter evacuation time, smoother evacuation by helicopter, a more stable tactical situation, routine use of antibiotics, and, of primary importance, the administration of large quantities of blood.

---

[3] Artz, C. P., and others: Clinical Experiences in the Early Management of the Most Severely Injured Battle Casualties, to be published.

[4] Artz, C. P.; Sako, Y., and Bronwell, A. W.: Massive Transfusion in the Severely Wounded: Report of a Case Receiving 23,350 Cc. of Blood in the First Twenty-Four Hours, to be published.

[5] Beebe, G. W., and De Bakey, M. E.: Battle Casualties: Incidence, Mortality, and Logistic Considerations, Springfield, Ill., Charles C Thomas, Publisher, 1954.

[6] Sako, Y., and others: A Survey of Evacuation, Resuscitation, and Mortality in a Forward Surgical Hospital, to be published.

During the final six months of the Korean conflict, 138 consecutive casualties receiving massive transfusions were studied.[3] These patients received 5 (2,365 cc.) or more pints of blood for restoration during the first 24 hours after injury. Their over-all mortality rate was 14.5%. The mortality rate varied in accordance with the amount of blood required for restoration: in the 5 to 10 pt. (2,365-4,730 cc.) group the mortality rate was 1.6%; in the 10 to 15 pt. (4,730-7,095 cc.) group, 16%; in the 15 to 20 pt. (7,095-9,460 cc.) group, 25%; in the 20 to 56 pt. (9,460-26,488 cc.) group, 53%.

There were 33 casualties who were admitted with a systolic blood pressure less than 80 mm. Hg. The mortality rate for this group was 21%. The type of wound varied, with no particular type of injury predominating. The total amount of blood administered in the first 24 hours ranged from 2,500 cc. to 28,000 cc.; the average amount given was 7,600 cc. Ten casualties in this group were admitted with a blood pressure too low to be obtained by the usual cuff method. Three of these died, two from uncontrolled hemorrhage, and the cause of death in the other was unknown. The seven casualties who lived required from 11 to 26 pt. (5,203-12,298 cc.) of blood in the first 24 hours.

Blood volume determinations were carried out in 15 patients by the chromium 51-labeled red cell method.[7] All determinations were performed in the early postoperative period. After administration of massive quantities of blood, these determinations demonstrated an average blood volume of only 80% of the calculated normal. Only two casualties had blood volumes somewhat higher than normal. In general, these studies showed that overtransfusion rarely occurred in spite of the infusion of massive quantities of blood. In these most severely wounded, the amount of blood given preoperatively was about the same as the amount required during the operative procedure. In the patients who received 5 to 10 pt. (2,365-4,730 cc.) of blood, about 3 pt. (1,419 cc.) were given prior to operation and 3 pt. (1,419 cc.) during operation. In the more severely wounded, the 10 to 56 pt. (4,730-26,488 cc.) group, 7 pt. (3,311 cc.) of blood were given prior to operation and almost 7 pt. (3,311 cc.) of blood were given during operation. This points out that, during operation, large quantities of blood are lost from the multiple sites of injury.

INTRA-ARTERIAL AND INTRAVENOUS TRANSFUSIONS

If a patient has a severe hypotension and his condition is markedly deteriorated, blood should be given rapidly. Some surgeons prefer transfusion by the intra-arterial route. Recent experimental studies in the dog have failed to confirm the superiority of intra-arterial transfusions over intravenous transfusions except that frequently it is possible to administer blood more rapidly into an artery.[8] A preliminary evaluation of the two routes of transfusion was carried out in a very small group of patients in Korea.[9] Six patients admitted in extremely poor condition, with very low blood pressure, were given blood intra-arterially. The average rate of infusion was 88 cc. per minute. Six other patients, who were in a similar condition, received blood by multiple intravenous channels, and the rate of infusion was 70 cc. per minute. The response in each group was similar. No attempt was made to achieve an absolute maximum rate of infusion by either method. The data represent the actual accomplishments of blood replacement in a small series of patients in deep oligemic shock. Although no definite conclusions can be drawn from this very limited experience, the impressions were that blood given by the intra-arterial route was of no more value than was blood given intravenously, and it was seen that blood could be given as rapidly through multiple venous channels as by the intra-arterial route. The intra-arterial transfusions were given after exposure and cannulization of the femoral artery, at which time the surgeon held the needle in the artery during infusion. There were no complications.

SUMMARY

The wound is a continuing insult to the body; therefore resuscitation must be a continuous series of corrective procedures. The aim of initial care of the severely wounded is to prepare them for transportation to the nearest hospital, then further preparation for operation. Unless hemorrhage is uncontrolled, the patient should be restored until the systolic blood pressure is 110 mm. Hg or more and the pulse rate 120 per minute or less before the operation. When there are multiple areas of injury, priority for operation should be given to the area of hemorrhage, chest, abdomen, head, and extremities, in that order. Dextran is valuable as an emergency replacement solution; it replaced plasma during the latter part of the Korean conflict. When adequate amounts of blood are not available, restoration may be carried out satisfactorily by administering dextran and conservative quantities of blood. In Korea the mortality rate for persons who had abdominal wounds was about one-half the mortality rate for a comparable series in World War II. The use of massive transfusions seems to be the predominant contributing factor. In a group of 138 wounded persons who required from 5 to 56 pt. (2,838-26,488 cc.) of blood in the first 24 hours after injury, the mortality rate was 14.5%. Impressions gained from a limited study were that blood infused by the intra-arterial route was of no more value than blood infused by multiple intravenous routes.

Surgical Research Unit, Brooke Army Medical Center (Colonel Artz).

---

[7] Prentice, T. C.; Olney, J. M., Jr.; Artz, C. P., and Howard, J. M.: Studies of Blood Volume and Transfusion Therapy in the Korean Battle Casualty, Surg., Gynec. & Obst., to be published

[8] Case, R. B.; Sarnoff, S. J.; Waithe, T. E., and Sarnoff, L. C.: Intra-Arterial and Intravenous Blood Infusion in Hemorrhagic Shock, J. A. M. A. 152:208 (May 16) 1953

[9] Artz, C. P.; Bronwell, A. W., and Sako, Y.: Experiences with Intra-Arterial and Intravenous Transfusions, Report of Surgical Research Team in Korea, Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington, D. C., 1954.

PREVENTION AND TREATMENT OF ATHEROSCLEROSIS

Campbell Moses, M.D., Pittsburgh

Because of the increasing importance of the problem of cardiovascular disease, and particularly the problem of atherosclerosis, it is the desire of all physicians to do something effective about the prevention and management of this disorder. With recognition of the growing importance of this problem, an accelerated research program in this country and throughout the world has been initiated. As a result, increasing notice has been taken of each new drug suggested as being of value. Physicians, perhaps in part because of the frequency with which catastrophic cardiovascular accidents occur in their own profession, are prone to accept these drugs for use, in the hope that response will be beneficial. Unfortunately, as of this moment, no drug or other preparation has been demonstrated to significantly alter the development of atherosclerosis. Although many promising leads have been explored, none has proven of practical, clinical value. In this presentation an attempt will be made to indicate briefly the rationale for several forms of drug therapy that have been suggested and to summarize the present status of the problem.

CHOLESTEROL

Deposition Versus Intrinsic Arterial Lesion.—It has long been known that the increased deposition of cholesterol in the intimal and subintimal layers of arteries occurs early in the development of atherosclerosis. Indeed, most of the emphasis in the past few years has been on explaining the role of the circulating cholesterol in this process of intimal deposition. It must be emphasized that the role of the circulating cholesterol is not to be considered alone but must be considered in relationship to the capacity of the arteries themselves to participate in the vagaries of cholesterol metabolism. The recent demonstration that the arterial wall may actually synthesize cholesterol indicates the importance of this concept.[1]

Circulating Cholesterol.—The level of the circulating cholesterol is the result of the absorption of cholesterol from the diet, its synthesis, and the degradation and utilization of cholesterol, particularly by the liver. Quantitatively, the least important of these factors in the maintenance of the plasma cholesterol levels is that factor that is absorbed from the diet. Large amounts of cholesterol, as much as 20 times that absorbed from the diet, are synthesized daily from radicals as small as acetate. Recent studies have shown that perhaps the most important factor in regulating the level of the plasma cholesterol is the variation in the rate of degradation.[2] To control the role of blood cholesterol in the pathogenesis of atherosclerosis, attempts have been made to sharply restrict cholesterol intake or to modify cholesterol absorption by the administration of sterols that compete for intestinal absorption with cholesterol and, thereby, prevent the normal reabsorption of cholesterol from the intestinal tract. These substances, largely plant sterols, do not alter the rate of synthesis or degradation of cholesterol in the body and, therefore, only interfere with the least important of the several factors regulating the blood cholesterol level. As would be anticipated, the effects of the plant sterols on the level of circulating cholesterol are, generally, not pronounced, and as yet these have not been demonstrated to be of any significant practical value in the handling of human atherosclerosis. In considering the effect of any therapeutic regimen on the total cholesterol level, one must recognize the sharp spontaneous variations that occur in the serum cholesterol. This may be much more significant than the effect of the drug or therapeutic procedure.

Quality Versus Quantity.—It should be pointed out that restricted cholesterol intake and the administration of plant sterols tend to interfere with the quantity of the circulating cholesterol and in no way are designed to modify its quality. Increasingly, it is becoming apparent that not only the quantity of circulating cholesterol is important but also its quality. This has been particularly emphasized by the work of Gofman,[3] who has shown that the cholesterol-containing lipoprotein complex may be of prime importance in altering the rate of cholesterol deposition. While all the factors altering the form in which cholesterol is carried in solution in the blood are not known, it has been established that heparin and a high titer of circulating estrogens tend to facilitate the transport of cholesterol in lipoprotein complexes that are not prone to be deposited on the intimal surface. The heparin effect, first noted as a lipemia-clearing factor, is to increase the proportion of lipoprotein molecules of sizes smaller than those likely to be related to atherogenesis. The estrogen effect is related to the observation that young women have a decidedly lower incidence of coronary atherosclerosis than do men or women in the postmenopausal ages.

From a practical point of view, it is not possible to administer either heparin or its synthetic analogues in sufficient concentration to alter consistently the quality of the circulating cholesterol so that cholesterol deposition does not occur. Levels of circulating heparin necessary to exert this effect are well into the hazardous bleeding level. The administration of heparin at infrequent intervals or by the depot technique does not result in any discernible beneficial effect on the circulating lipoproteins and, therefore, exerts no effect on the atherosclerotic process. Similarly, heparin exerts no beneficial effects aiding the removal of atherosclerotic lesions from arteries once they have developed. It should be pointed

---

From the Addison H. Gibson Laboratory, University of Pittsburgh School of Medicine.

Read before the Section on General Practice at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 24, 1954.

Portions of the work included in this report were made possible by a grant from the Wherrett Memorial Fund of the Pittsburgh Foundation.

[1] Srere, P. A.; Chaikoff, I. L.; Treitman, S. S., and Burstein, L. S.: Extrahepatic Synthesis of Cholesterol, J. Biol. Chem. **182**: 629, 1950.

[2] Friedman, M., and Byers, S. O.: Mechanism Responsible for Hypercholesteremia Induced by Triton WR 1339, J. Exper. Med. **97**: 117, 1953.

[3] Gofman, J. W., and others: The Role of Lipids and Lipoproteins in Atherosclerosis, Science **111**: 166, 1950.

out, however, that experimentally, the administration of large doses of heparin to animals on a regimen likely to result in atherosclerosis slightly, but definitely, reduces the severity of the atherosclerotic lesions. The administration of estrogens to produce a shift in the form in which cholesterol is carried in combination with lipoprotein toward that seen in the young female must be at a dosage level high enough to produce significant side-effects such as depression of libido and the development of gynecomastia.[4] Other hormones, particularly the thyroid, may play a significant role in regulating the development of atherosclerosis. It has long been claimed that the person with hypothyroidism tends to have an elevation of the total serum cholesterol, although there is considerably less evidence that this elevation of cholesterol is associated with any increase in the rate of development of atherosclerosis. On the other hand, hyperthyroidism, with its attendant low cholesterol levels, does not seem to be associated with any significant decrease in the development of atherosclerosis.

Lipid Phosphorus Ratio.—The role of the circulating phospholipid measured as lipid phosphorus has been thought to play some role in keeping the cholesterol in suspension. While the ratio of cholesterol to lipid phosphorus has been widely discussed as a diagnostic test for atherosclerosis, there is now ample evidence to indicate that this ratio is simply a reflection of variations in the cholesterol level and that the phospholipid plays no significant role in maintaining the cholesterol in solution.[5] For this reason, attempts to administer various phospholipids to influence the cholesterol-lipid-phosphorus ratio exert no significant effect on the course of atherosclerosis. The recent demonstration by Mann[6] of the role of protein deficiencies in the diet in the production of atherosclerosis in Cebus monkeys directed attention again to the role of dietary protein in the atherosclerotic problem. While the significance of dietary protein so far as human atherosclerosis is concerned is not known, the protein lipid complexes in which the cholesterol is carried may play a major role in influencing cholesterol deposition. For this reason, and because the dietary proteins provide lipotropic material, probably an adequate protein diet is important; however, there is no proof that parenterally protein hydrolysates or an excessive protein diet tend to alter the rate of development of atherosclerosis.

LIPOTROPIC AGENTS

By far the most widely heralded group of drugs for the prevention and retardation of atherosclerosis have been the lipotropic drugs—choline, methionine, and inositol. These materials provide a vital need in the body economy by facilitating the mobilization of fat from the liver. In animals and man receiving a diet inadequate in these lipotropic materials, accumulation of fat in the liver occurs. This can be readily reversed by the administration of lipotropic agents. It is important to note, however, that in the presence of an adequate diet, the administration of additional amounts of these lipotropic agents does not further decrease the accumulation of fat in the liver parenchyma. The lipotropic effect on the liver is normally a prophylactic one and not therapeutic, except after severe deficiency. Recently, Wilgram, Hartroft, and Best[7] have for the first time observed that, in young rats with experimental choline deficiency, abnormal quantities of lipids are deposited in the aorta and coronary arteries. This is the first demonstration that choline deficiency can influence lipid deposition in blood vessels. However, they found this to occur only in animals with severe dietary deficiency, and there is no evidence that this occurs otherwise. This is an important distinction because the mobilization of fat from the liver in lipotropic deficient animals and man and the deposition of lipid in the coronary arteries and aorta in the presence of choline deficiency is a different matter from expecting beneficial effects from the administration of large amounts of lipotropic agents to animals without any antecedent dietary deficiency. There is no acceptable evidence either in man or animals that atherosclerotic lesions can be retarded or reversed by the administration of either one or several lipotropic agents in combination, and there is considerable evidence that the administration of large amounts of these dietary supplements to patients with moderate degrees of hepatic damage may be detrimental.[8]

COMMENT

Atherosclerosis and its complications remain a leading cause of death, because no drug or other therapeutic technique is satisfactory for its control. Indeed, because of the interplay of genetic, physiological, biochemical, and pathological influences that alter the rate of development of atherosclerosis, there is little likelihood that any consistent method for the prevention of this disorder will develop in the near future. As has been indicated there are no drugs that, at least in man, are effective agents in preventing the arterial corrosion that characterizes arteriosclerosis. Just as in a plumbing system, the quality of the piping, as well as the corrosiveness of the fluid passing through the pipes, determines the "rusting" that takes place, in man the character of the arterial wall itself plays a major role in the development of atherosclerosis. Until more understanding is obtained about the metabolism of cholesterol in the arterial wall itself, no drugs can be recommended as a rational means of preventing atherosclerosis.

The following factors seem to act against the development of atherosclerosis: (1) having forebears, including both parents and grandparents, who are long-lived and come from long-lived families; (2) being a woman, preferably, a woman under 45 years of age; (3) eating a normal diet, avoiding excessive caloric intake, but including ample supply of protein; and (4) solving emotional conflicts, and particularly, for physicians, the fear of having coronary atherosclerosis, by some other means than becoming obese or developing hypertension.

3941 O'Hara St. (13).

---

4. Barr, D. P Some Chemical Factors in the Pathogenesis of Atherosclerosis, Circulation 8:641, 1953.

5. Jackson, R. S, and others: Relationship Between the Phospholipids and the Cholesterols in Human Plasma, Circulation 2:472, 1950.

6. Mann, G. V, McNally, A, and Andrus, S. B.: Experimental Atherosclerosis in Cebus Monkeys, J. Exper. Med 98:195, 1953.

7. Wilgram, G. F., Hartroft, W. S., and Best, C H.: Abnormal Lipid in Coronary Arteries and Aortic Sclerosis in Young Rats Fed a Choline-Deficient Diet, Science 119:842, 1954.

8. Galuyda, G. J., Jr., and Davidson, C. S: Protein Metabolism in Patients with Cirrhosis of the Liver, Ann. N. Y. Acad. Sc. 57:776, 1954.

OCCIPUT POSTERIOR POSITION

SIX YEARS' EXPERIENCE AT PARKLAND HOSPITAL

Douglas M. Haynes, M.D., Dallas, Texas

The many authors of the past two decades who have discussed the subject of posterior positions of the fetal occiput have consistently adhered to one or the other of two opposite viewpoints regarding the clinical importance of this fairly common obstetric situation. These viewpoints are well expressed in the following pair of representative quotations. Melhado[1] writes, "... it (*occipitoposterior position*) is conceded by all to be the most common obstetric anomaly and is responsible for a higher fetal wastage and greater maternal injury than almost any other condition." In startling contrast, Calkins[2] says, "... occiput posterior presentation adds nothing to fetal mortality *if treated in the same way we treat occiput anterior presentation.* Maternal morbidity is likewise unaffected." It would seem that additional clinical studies are needed.

This report presents data from 360 women with occiput posterior positions of their fetuses delivered at Parkland Hospital between 1947 and 1952 of infants weighing 1,500 gm. or more. On the basis of this material, I wish to present a simple, workable plan possessing several advantages over some other commonly used methods for clinical management of the occipitoposterior position.

INCIDENCE

The incidence of occiput posterior at Parkland Hospital for the years 1947 to 1952 is summarized on table 1. No woman whose infant weighed less than 1,500 gm. was included in the series because occiput posterior position is not a problem when the child is nonviable. The incidence of 2.9% of occiput posterior diagnosed during labor is low in comparison with other published series. The figure indicates lack of recognition of the position early in labor and is partly explained by the fact that many patients do not allow examination until their labor is far advanced. In fact, as the table indicates, all but 0.3% of recognized occipitoposterior position in the es represent patients with persistent occiput posterior. nce the clinical problems arising specifically as the result of posterior positions of the occiput are almost all related to persistence of those positions, these patients make up a series that is thoroughly adequate for evaluating the method of management. The incidence of 2.6% persistence of the posterior position is in line with that previously reported by others.

DURATION OF LABOR

The duration of total and second stage labor in the patients with fetuses in occipitoposterior positions is indicated by table 2. I define "prolonged labor" as that condition exhibited by a parturient who has not been delivered after 30 hours or more of objectively observed uterine contractions capable of bringing about progressive effacement and dilation of the cervix. There was prolongation of labor by these criteria in 29 women of this series—a somewhat higher incidence of this complication for the occiput posterior than for the over-all clinic group, but one that falls far short of a statistical indication of any drastic influence of the occipitoposterior position on the duration of labor. It will be noted that 324 of 360 women were delivered less than two hours after the cervix had become completely dilated. This figure reflects a cardinal point in the method of management favored by Parkland Hospital, namely, prompt delivery after the second stage has been reached. The often repeated statement that occipitoposterior positions are associated with serious problems of exhaustion due to prolongation of the second stage of labor is true only if one insists that complete spontaneous anterior rotation of the presenting head must have occurred before delivery can be safely undertaken. I do not believe that such insistence is justified.

TYPE OF DELIVERY

Several important facts about the clinical management of delivery from occipitoposterior positions are illustrated by table 3. It is particularly significant that 59.2% of these patients were delivered spontaneously, since almost all of them were delivered with the occiput directly posterior. Generally, forceps extraction is elected in primigravidas when the cervix is fully dilated and the head is on the pelvic floor; the indicated 28.3% incidence of low forceps operations reflects this policy. The frequency of mid-forceps operations has dropped steadily as the understanding and recognition of cephalopelvic disproportion have improved, and it should be pointed out that most of the 45 mid-forceps operations performed on patients in this series were done during the first two years of the six year period covered in the study. I also wish to underscore the fact that in no patient did the occipitoposterior position motivate the performance of cesarean section.

FETAL MORTALITY

Three hundred eighty-four children were born to the 360 women in this series. Eighteen of these infants died, as indicated in table 4. Fifteen of these deaths conceivably could be related to the occipitoposterior position, although such a relationship should not be dogmatically assumed. Five of these infants were examined post mortem; in two of them, the cause of death was fetal atelectasis, and in each of the others it was, respectively, pneumonitis, septicemia, and undetermined. None of these five infants exhibited postmortem evidence of intracranial hemorrhage or other lesions suggestive of trauma of delivery.

From the Departments of Obstetrics and Gynecology of Parkland Hospital and the University of Texas, Southwestern Medical School.

Read before the Section on Obstetrics and Gynecology at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 23, 1954.

[1] Melhado, G. C.: The Occipitoposterior Position: A Method of Management, with an Analysis of 976 Cases, Tr. Am. Gynec. Soc. 58: 187, 1933.

[2] Calkins, L. A.: Occiput Posterior Presentation, Obst. & Gynec. 1: 466, 1953.

ANESTHESIA

The types of anesthesia used for delivery of the women in this series are listed in table 5. Since some type of spinal anesthesia was used in about one-third of the patients, this factor might account for persistence of the posterior position in at least some of them. There are two reasons why such an opinion is not tenable: 1. Spinal anesthesia was not induced in any patient until delivery was imminent. 2. The over-all incidence of persistence of occipitoposterior positions was less than that of other well-studied series in which conduction anesthesia was not used at all. An appreciable number of patients give birth en route to, or just after arriving at, the delivery room suite. This fact accounts for a significant part of the group of 77 women who received no anesthetic.

TABLE 1.—*Occiput Posterior Incidence*

Total Births with Cephalic Presentation 12,4[illegible]

		No	%
Occiput Posterior			
Diagnosed during labor		360	2.9
Primigravidas	60		
Multigravidas	300		
Delivered as such		324	2.6
Primigravidas	55		
Multigravidas	269		

TABLE 2.—*Duration of Labor*

Length of Labor, Hours	Primi gravidas	Multi gravidas	Total
Total			
Less than 10	13	172	185
10-29	42	104	146
More than 30	5	24	29
Second stage			
Less than 1	20	228	248
1-2	23	53	76
More than 2	14	17	31
Undetermined	3	2	5

TABLE 3.—*Type of Delivery*

	Primi gravidas	Multi gravidas	Total	
			No	%
Spontaneous	11	202	213	59.2
Low forceps	39	63	102	28.3
Mid forceps	10	35	45	12.5
Cesarean section	.	.	.	.
Total	60	300	360	100

MATERNAL PROGNOSIS

There was no maternal mortality in this series, nor were any serious permanent sequelae traceable to the occipitoposterior position. Puerperal morbidity showed no increase over that recorded for all women delivered in Parkland Hospital during the same time interval. Injuries sustained by maternal soft tissues are indicated in table 6. By "third degree tear" is meant a vaginal laceration that disrupts the external anal sphincter and involves the rectal mucosa. A "second degree tear" is defined as any laceration that involves the perineal musculature but does not fulfill the above criteria for third degree tears. The data clearly indicate that delivery of the fetal head from the directly posterior position did not result in any serious maternal sequelae, either immediate or remote.

COMMENT

From the experience summarized above, the following simple working plan has been formulated for the management of persistent posterior positions of the fetal occiput: 1. The first stage of labor is managed exactly as in occiput anterior. 2. If an obliquely posterior position persists after 45 minutes of second stage labor and manual rotation cannot be easily performed, it is concluded that the head has become molded in the posterior position. One then proceeds immediately with low forceps rotation to occiput directly posterior, followed by prompt delivery as such after performance of adequate mesiolateral episiotomy.

Experience at Parkland has specifically discouraged adoption of that classically ultraconservative attitude that advocates prolongation of the second stage of labor until complete spontaneous anterior rotation of the head has occurred. Such a plan invites the complications of secondary uterine inertia even if the anterior rotation is ultimately achieved. Furthermore, it is clear from the data that posterior rotation of the occiput actually takes place in many of these patients late in labor, the time-hallowed classical teachings on the subject to the contrary notwithstanding. Again, the staff at Parkland Hospital believes that the fetal head that has become firmly molded in the posterior position is far more likely to be damaged by anterior than by posterior rotation. This is especially true if the operator is an apprentice rather than a master in the obstetric art, as is the case with residents. In summary, this analysis of experience with occipitoposterior positions, largely of the persistent type, seems to refute the familiar contention that this "anomaly" of labor is so fraught with potential complications that it is a bête noire of obstetrics. The staff at Parkland believes with Calkins[2] and others that the mechanism of labor in occiput posterior, whether persistent or not, is actually neither anomalous nor ominous.

TABLE 4.—*Fetal Mortality*

		No	%
Mortality			
Gross		18	4.7
Corrected		15	3.9
Less than 2,500 gm	2		
Prolapsed cord	1		

TABLE 5.—*Anesthesia*

	No	%
Inhalation	72	20.0
Conduction		
Spinal	121	33.6
Pudendal	85	23.6
Caudal	5	1.4
None	77	21.4

TABLE 6.—*Injuries to Maternal Soft Tissues*

Type	Primi gravidas	Multi gravidas	Total	
			No.	%
Third degree tears	1	6	7	1.9
Second degree perineal tears	4	11	15	4.2
Cervical tears requiring hemostasis	2	..	2	0.6
Vaginal tears requiring hemostasis	5	12	17	4.7
Total injuries to maternal soft tissue	12	29	41	11.4

SUMMARY AND CONCLUSIONS

In 12,488 cephalic births at Parkland Hospital over a six year period, there were 360 instances, 2.9%, in which fetuses weighing 1,500 gm. or more were found to be presenting in occipitoposterior position during labor. Three hundred twenty-four of these fetuses, 90%, were delived as such. Labor was prolonged more than 30 hours in 29 instances, or 8%. Spontaneous delivery after unaided rotation to the directly posterior position was observed 213 times, or in 59.2% of deliveries. The incidence of low forceps extraction was 28.3%. Eighteen of 384 infants died, or 4.7% gross mortality. There was no maternal death or serious maternal sequel attributable to the posterior position. These results were obtained by residents in training as the result of a departmental policy that emphasizes conservative operative delivery when the second stage of labor threatens to be prolonged. The data indicate that occipitoposterior positions, whether persistent or not, ought not to be considered as an abnormal mechanism.

2211 Oaklawn Ave. (19).

CLINICAL NOTES

ACCIDENTAL INGESTION OF BISHYDROXYCOUMARIN

USE OF VITAMIN K_1 EMULSION IN TWO CASES

Villiam B. A. Bentley, M.D., Waterbury, Conn.

With increasing use of bishydroxycoumarin (Dicunarol) and related drugs in the treatment of thrombombolic disorders, hemorrhage as a complication of the esulting hypoprothrombinemia has become a serious roblem.[1] Diagnosis of the cause of bleeding in a patient nown to be receiving anticoagulants rarely presents a problem; however, there have been recent reports of self-administration of bishydroxycoumarin by malingerers[2] in whom the cause of bleeding was difficult to establish. Ingestion of bishydroxycoumarin by accident has not been reported previously. This paper presents two cases in which hemorrhage occurred after bishydroxycoumarin was taken in the mistaken belief that it was aspirin. In both cases, rapid cessation of bleeding and return of the prothrombin time to normal followed intravenous administration of vitamin K_1 emulsion.[3] Suspicion that poisoning by a bishydroxycoumarin-like agent had occurred was confirmed by careful inquiry and by chemical analysis of the medicament.

REPORT OF CASES

A 66-year-old, white, married woman was admitted to the hospital in the early morning of Dec. 21, 1953, with an 18 hour history of hemoptysis and hematuria. Eighteen hours before admission to the hospital she had become hoarse and started to cough up bright red blood in copious amounts. At the same time she noted blood in her urine. Because of these complaints her physician advised admission to the hospital.

There had been no previous history of abnormal bleeding or easy bruising. The patient had been accustomed to taking one or more sleeping pills at night, but since none had been available for the week prior to admission, she had taken instead two "aspirin" tablets every night.

On admission physical examination disclosed a lethargic, elderly, white woman with rapid, shallow, stertorous respirations. Temperature was 100.8 F rectally, pulse rate 120, respiratory rate 36, and blood pressure 140/80 mm. Hg. She had a weak cough productive of mucoid sputum mixed with old and fresh blood. There were numerous fresh ecchymoses over the arms, legs, and buttocks, and a small, fresh hemorrhage was seen in the fundus of the right eye. Loud tracheal rhonchi and inspiratory and expiratory wheezes were heard throughout both lung fields. The heart was normal. No other sites of bleeding were found in the abdominal, pelvic, or rectal regions.

Urinalysis showed gross hematuria. Hemoglobin was 12.4 gm. per 100 cc., red blood cells 4,100,000 per cubic millimeter, and hematocrit 42%. There were 15,200 leukocytes with 92% polymorphonuclear leukocytes, and there were 234,000 platelets per cubic millimeter. Blood urea nitrogen, serology, and liver function tests all were within normal limits. Bleeding time was normal, and clotting time by the capillary tube method was 12 minutes (normal 3 to 5 minutes). Prothrombin time[4] of undiluted plasma was 95 seconds (normal 15 to 18 seconds), less than 10% normal activity.

Course.—At the time of admission direct laryngoscopy revealed no bleeding above the vocal cords. After this procedure a hematoma of the right side of the tongue developed. Hematomas also appeared at the site of venipuncture. The markedly prolonged prothrombin time (95 seconds) indicated that the patient was suffering from a severe prothrombin deficiency. Accordingly, 312 mg. (5 mg. per kilogram of body weight) of vitamin K_1 emulsion was given intravenously. In three hours the prothrombin time had fallen to 47 seconds (10% normal activity), and there was no further evidence of pulmonary bleeding. Five hours after injection of the vitamin K_1 emulsion the prothrombin time was 21.7 seconds (27% normal activity); after 18 hours it was 18.4 seconds (42% normal activity); and after 20 hours it was 15 seconds (100% normal activity). Daily determinations thereafter were normal. Bleeding and clotting times the day after admission also were normal, and no further gross bleeding was observed. Microscopic hematuria persisted for 24 hours, and old blood was present in the sputum for four days. The patient's course was otherwise uneventful, except for elevation of the temperature for eight days. The hemoglobin level on the day after admission was 9.6 gm. per 100 cc., and the red blood cell count was 3,100,000 per cubic millimeter. The patient was given supplementary iron orally, and these values rose gradually.

On the evening after the patient's admission, her husband casually remarked to the resident physician that he had had three grossly bloody stools on that day. Rectal examination confirmed this observation, but no additional sources of bleeding were found. When it was determined that his prothrombin time was 35 seconds (11% normal activity), he was given 50 mg. of vitamin K_1 emulsion intravenously. Eighteen hours later the prothrombin time was 18.1 seconds (45% normal activity), and no further bleeding was reported.

From the Department of Medicine, St. Luke's Hospital, New York.

The vitamin K_1 emulsion used in this study (Mephyton) was supplied by Merck & Company, Inc., Rahway, N. J.

Chemical analysis was performed by Alexander O. Gettler, Ph.D., Chief Toxicologist, Office of the Medical Examiner of the City of New York.

[1] Wright, L. T., and Rothman, M.: Deaths from Dicumarol, A. M. A. Arch. Surg. **62**: 23 (Jan.) 1951.

[2] Wright, I. S.; Tocantins, L. M.; Olwin, J. H., and Brambel, C. E.: Blood-Clotting and Allied Problems, Transactions of the Fifth Conference, New York, Josiah Macy, Jr. Foundation, 1952, p. 77. Cosgriff, S. W.: Hemorrhage Due to Self-Medication with Bishydroxycoumarin, J. A. M. A. **153**: 547 (Oct. 10) 1953. Stafne, W. A., and Moe, A. E.: Hypoprothrombinemia Due to Dicumarol in Malingerer: Case Report, Ann. Int. Med. **35**: 910 (Oct.) 1951.

[3] Watkin, D. M., and others: Treatment of Dicumarol-Induced Hypoprothrombinemia in Man with Emulsified Vitamin K_1 Administered Intravenously, J. Lab. & Clin. Med. **37**: 269 (Feb.) 1951. Van Itallie, T. B.; Geyer, R. P., and Stare, F. J.: Vitamin K_1 Emulsions in Bishydroxycoumarin Emergencies: Results of Intravenous Administration, J. A. M. A. **147**: 1652 (Dec. 22) 1951.

[4] Campbell, H. A.; Smith, W. K.; Roberts, W. L., and Link, K. P.: Studies on Hemorrhagic Sweet Clover Disease: II. The Bioassay of Hemorrhagic Concentrates by Following the Prothrombin Level in Plasma of Rabbit Blood, J. Biol. Chem. **138**: 1 (March) 1941.

Further questioning of the patient's husband disclosed that two years previously he had received bishydroxycoumarin as a clinic patient because of peripheral vascular disease. He had saved the drug after treatment with it was discontinued, as was his habit with all medicaments. Apparently he had transferred it to an empty aspirin bottle and then forgotten about it. Thus, for a week prior to his wife's admission to the hospital, both of them had taken one or two "aspirin" tablets every night in order to sleep. The suspected medicament was analyzed and proved to be bishydroxycoumarin.

COMMENT

The cases reported again dramatize the need for caution among physicians in the use of anticoagulants in the treatment of ambulatory patients. Intoxication from prothrombin-depressing drugs should be considered in the differential diagnosis of hemorrhagic states. In the cases reported herein the diagnosis was suspected but was not established until prompt response to the intravenous administration of vitamin K_1 emulsion occurred and analysis of the suspected medicament was completed.

SUMMARY

Intravenous administration of vitamin K_1 emulsion in two patients with hemorrhage resulting from accidental ingestion of bishydroxycoumarin brought prompt return of the prothrombin time to normal and cessation of bleeding.

101 N. Main St.

COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION

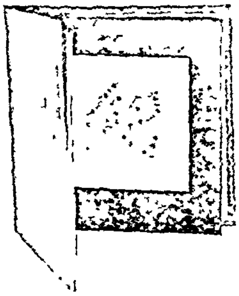
APPARATUS ACCEPTED

The following additional products have been accepted as conforming to the rules of the Council on Physical Medicine and Rehabilitation of the American Medical Association for inclusion in Apparatus Accepted. A copy of the rules on which the Council bases its action will be sent on application.

Ralph E. De Forest, M.D., *Secretary.*

Dvorine Pseudo-Isochromatic Plates, Second Edition

Israel Dvorine, O.D., 2328 Eutaw Pl., Baltimore 17.



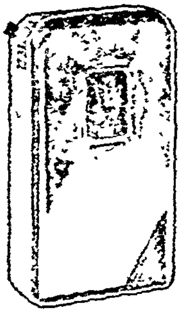
Dvorine Pseudo-Isochromatic Plates

The Dvorine Pseudo-Isochromatic Plates, second edition, designed as a test for color blindness, are contained in a loose-leaf binder and arranged in two sections. Section 1 contains one demonstration plate (the numeral 48 in red dots on a background of blue dots) and 14 plates made up of several color combinations. Section 2 contains one demonstration plate (a trail of blue dots on a background of red dots) and seven plates featuring trails instead of digits. Each of these plates consists of different color combinations. The second section can be used in testing preschool children and illiterate adults. The plates are not intended for the broad study or individual diagnosis of peculiarities of color vision but for the quick detection of a particular, common defect in red-green discrimination.

The binder fits into a box measuring 18 by 18.5 by 3.5 cm. (7¼ by 7½ by 1½ in.). The shipping weight is 560 gm. (1¼ lb.).

Acousticon Hearing Aid, Model A-335

Dictograph Products Inc., 95-25 149th St., Jamaica 35, Long Island, N. Y.



Acousticon Hearing Aid, Model A-335

The Acousticon Hearing Aid, Model A-335, is a tubeless instrument incorporating three transistors. Variation of the acoustic gain is adjusted by choosing from among five possible batteries: 1.25 volts, 22.8 gm.; 2.5 volts, 26.3 gm.; 4 volts, 13.5 gm.; 5.2 volts, 17 gm.; and 6.5 volts, 20.3 gm. Like several other makes of hearing aids, this model also uses a circuit utilizing transistors that lend themselves to this simple way of adjusting the power of the instrument.

The body of the instrument measures 78 by 44 by 22 mm. and weighs 80 gm. without batteries. The earphone weighs 10.4 gm. and the receiver cord 2 gm., making the total weight between 105.9 and 118.7 gm., depending on the battery.

COUNCIL ON INDUSTRIAL HEALTH

ROLE OF THE PATCH TEST IN CONTACT DERMATITIS

The following report has been prepared by the Committee on Occupational Dermatoses of the Council on Industrial Health. The committee consists of:

John G. Downing, M.D., Chairman
Donald J. Birmingham, M.D. *George E. Morris, M.D.*
Harry Foerster, M.D. *Ray O. Noojin, M.D.*
James W. Jordan, M.D. *Leonard F. Weber, M.D.*
C. M. Peterson, M.D., *Secretary.*

Materials capable of producing contact-type dermatitis (dermatitis venenata) are limitless. The expansion of industry and the introduction of new compounds and products have added to the list of agents that can cause not only occupational dermatitis among workmen but nonoccupational dermatitis among the consumer public. This challenge to dermatologists and others interested in the field of contact dermatitis has brought to the fore the value of the diagnostic patch test to provide aid in determining the causative agent in contact dermatitis of occupational or nonoccupational nature. In a given case of contact-type dermatitis, the offending agent may be obvious or may be extremely difficult to determine. Since therapy, prognosis, and further prevention are so dependent on the establishment of the cause in contact eruptions, every possible effort must be made to determine the causative agent. To this end the patch test introduced for diagnostic purposes by Jadassohn in 1895 has, after almost 60 years of experience, proved its worth as an aid in eliciting the causes of contact-type dermatitis. In no small degree, therefore, patch testing has become a most necessary part of the diagnostic armamentarium of the dermatologist. While the technique can be performed by any physician, knowledge of the indications for use, of the test substances, and of the interpretation of reaction calls for a fully informed and inquisitive diagnostic mind developed by experience.

It must be constantly emphasized that the patch test is but a recognized aid to be employed in establishing the cause of contact dermatitis. Under no circumstance can it be considered a substitute for taking a clinical history, noting the site of the eruption, observing the nature of the lesions, and following the course of the disease. The procedure has no place in the practice of industrial dermatology if the patient has a well-recognized, uncomplicated skin condition, such as pityriasis rosea or psoriasis. Its true value lies in those cases of dermatitis venenata due to sensitizers. The test should not be performed in cases of dermatitis due to primary irritants, nor should it be forgotten that primary irritants account for almost 80% of the cases of contact dermatitis.

DIAGNOSTIC PATCH TEST

The typical employment of the patch test is in the following circumstances: (1) to determine the cause of outbreaks or isolated cases of contact-type dermatitis in industry where workers are directly or indirectly exposed to sensitizing chemicals; (2) to determine the cause of outbreaks or isolated cases of contact-type dermatitis suspected of being caused by wearing apparel, cosmetics, plants, and other environmental contactants; and (3) to assist in the differentiation between occupational and nonoccupational dermatitis.

Covered Patch Test.—The procedure followed in the covered patch test technique consists of the application of a small amount of the properly diluted [1] suspected external sensitizer or agent to an area of the normal skin of the patient. The test material is then covered with a square of linen or 4-ply gauze (¾ to 1 in.) followed by a larger square (1 to 1½ in.) of cellophane and then sealed to the skin by a still larger square (2 in.) of adhesive.[2] As an alternate method one may simply moisten the linen or gauze in the properly diluted test substance and then apply the test material in the manner described above. The cellophane serves a dual purpose, namely to deter the rapid loss of solvent from the testing medium and to demarcate reactivity at the site of the contactant from that commonly associated with adhesive tape. For control purposes the absorbent fabric should be moistened with the solvent alone, allowed to dry for the same length of time as the test material, and then placed at a test site relatively well removed from the test patch.

Should the history show that the patient is highly reactive to adhesive tape the test substance should be covered with a moisture-proof material and held to the skin by cotton or elastic bandage. If the testing agent is fabric, leather, wood, or other similar substance, it should be dampened with water and then covered with linen, cellophane, and adhesive as outlined above.

A more specific description of the techniques employed in the covered patch test follow.[2a] In using liquid or ointment test substances a ¾ in. square of absorbent fabric, such as 4-ply gauze or flannel, is saturated with the appropriate concentration of liquid or ointment.[1] The excess is removed, and the patch is then applied to the test site of the skin. The contact material is next covered with a 1½ in. square of noncoated cellophane. Finally, a 3 in. square of adhesive plaster is used to seal the test material and the cellophane to the skin. Solid test substances may be soluble or insoluble in water. If insoluble in water they should be dissolved in the appropriate solvent. The absorbent fabric should then be immersed in the solution, excess material removed, and the impregnated fabric applied. Solid objects such as nickel coins, other metals, jewelry, solid plastics, and the like can be applied directly to the skin, covered with cellophane, and then adhesive tape. In order to avoid loss and to maintain contact with the skin, powders or crystals should be applied to the absorbent fabric, moistened, and then applied to the test site. As in patch testing with other materials, caution must be used in order to test with recommended concentrations.[1] In each of the above instances the patch test material should be left in place for 24 or 48 hours before removal. On occasion, as in testing with fabrics or wearing apparel, longer contact (72 hours) may be indicated before removal is effected. At the time of application of the patch test, the patient should be advised to remove immediately any of the tests that cause burning or itching.

Open Patch Test.—The open patch test is indicated when the patient has been in contact with a volatile substance and presents a history of having an eruption develop following exposure to vapors, fumes, mists, or gases suspected of inducing specific sensitization. The procedure consists in exposing the forearm of the patient to an open vessel containing the suspected contactant. After an exposure of a few seconds or minutes, rarely longer, the exposure source is removed or covered, and the resultant reaction, if any, is noted at the test site for the next several days. Variations of the open patch test in testing volatile substances are the celluloid chamber method of Rokstad [3] and Miescher's vapor test [4] as described by Weinberger.[5] In the former, the irritant solvent is placed on the skin and covered with a celluloid chamber affixed to the skin with adhesive tape. In the latter, a small cylindrical tube, open at both ends, is fastened to the skin, and a wad of absorbent cotton containing two or three drops of the test material is inserted into the upper opening. Then a cork is placed on the upper end and contact is maintained for two hours. Another method of open patch testing is to employ the uncovered patch. In this instance, certain substances, such as nail polish, shellac, paint, or dyes, are applied to the skin and left uncovered for 24 or 48 hours. If the test material is a low-grade sensitizer the period of contact can be longer than would be used for a known potent sensitizer.

Only under rare circumstances should diagnostic patch testing be performed with substances of unknown nature. All too frequently workers exhibiting dermatitis, sometimes generalized, are referred for patch testing with unknown chemical compounds. Tests should not be conducted until the examiner has ascertained the nature of the compound. Failure to observe this rule has resulted in severe reactions ranging from profound burns to severe exfoliative dermatitis.

PROPHETIC PATCH TEST

The prophetic patch test is well known by dermatologists, toxicologists, and others interested in the study of cutaneous sensitization. The technique is used mainly to enable manufacturers to determine in advance whether substances about to be marketed (detergents, cosmetics, clothing, synthetic fibers, etc.) are apt to cause contact dermatitis of primary irritant or sensitizing nature. Since the test materials are new, it is presumed that the test subjects have not had previous contact and, therefore, are not allergic to the test substances before the patches are applied.[6a] Two series of patch tests, 10 to 14 days apart, are performed with the test material on at least 200 and preferably 300, 400, or 500 subjects. A material already used satisfactorily for a similar purpose is used as a control test. If a large percentage of subjects react to the test substance after the first application, it usually indicates that the substance is a primary skin irritant. On the other hand, the first test may give rise to definite allergic reactions if some of the subjects have been previously sensitized to the material or one of its ingredients. The second series using the same subjects, the same materials, and the same test sites reveals the number of subjects, if any, sensitized by the test agent. If, after the two series of tests, the number of true sensitization reactions produced by the test substance does not exceed the number of reactions caused by the control substance, the test material can be distributed in a small community for a trial usage test. It cannot be overemphasized that the prophetic patch test technique is but a screening procedure that indicates only in a limited manner the sensitizing potential of a new material. Without an adequate usage test, unwarranted reliance placed upon the prophetic patch test can be hazardous.

QUANTITATIVE PATCH TEST

A third usage is that generally referred to as the quantitative patch test [7] whereby either the sensitizing index of a given substance may be determined in advance or the extent of a person's degree of sensitivity may be ascertained in the case of chemicals that are soluble in volatile solvents. The essential factors in the quantitative method are employed as known constants in order to derive quantitative results: (1) known amount of test substance, (2) known concentration of test substance, (3) known area of test site, and (4) known time of test exposure. Each of these constants can be varied as the occasion demands.

---

[1] (*a*) Rostenberg, A., Jr., and Sulzberger, M. B.: Some Results of Patch Tests: Compilation and Discussion of Cutaneous Reactions to About 500 Different Substances, as Elicited by Over 10,000 'Tests in Approximately 1,000 Patients, Arch. Dermat. & Syph. **35**: 433-454 (March) 1937. (*b*) Schwartz, L.: Sensitivity to External Irritants in Industry, New York J. Med. **36**: 1969-1976 (Dec.) 1936. (*c*) Sulzberger, M. B.: Dermatologic Allergy: An Introduction in the Form of a Series of Lectures, Springfield, Ill., Charles C Thomas, Publisher, 1940, appendix 2, p. 540.

[2] (*a*) Birmingham, D. J.; Campbell, P. C., Jr., and Schwartz, L.: Use and Abuse of the Patch Test, Indus. Hyg. News. **8**: 3-5 (June) 1948. (*b*) Bloch, B.: Occupational Skin Diseases from the Biological Point of View, J. State Med. **38**: 373-382 (July) 1930.

[3] Rokstad, I.: New Modification of Patch Test (Chamber Method), Arch. Dermat. & Syph. **41**: 649-653 (April) 1940.

[4] Miescher, G.: Die Dunstprobe beim Ekzem, Schweiz. med. Wchnschr. **70**: 93-94 (Feb. 3) 1940.

[5] Weinberger, W.: The Patch Test—Its Technic and Interpretation, Arch. Indust. Hyg. **2**: 565-573 (Nov.) 1950.

[6] (*a*) Schwartz, L., and Peck, S. M.: The Patch Test in Contact Dermatitis, Report 59, U. S. Public Health Service, 1944, pp. 546-557. (*b*) Sulzberger, M. B., and Wise, F.: The Contact or Patch Test in Dermatology: Its Uses, Advantages, and Limitations, Arch. Dermat. & Syph. **23**: 519-531 (March) 1931.

[7] Dunn, J. E.; Mason, H. S., and Smith, B. S.: A New Technique for Performing Quantitative Contact (Patch) Skin Tests, J. Invest. Dermat. **6**: 323-336 (Dec.) 1945.

To determine the sensitizing index of a substance one should patch test a large number of subjects (1,000), using a constant skin area and a constant amount of the test substance in a constant concentration, and allow the test substance to maintain contact for a constant period of time. The number of reactors will provide a fair indication of the sensitizing index of the test substance. To determine a person's degree of sensitivity one should patch test the subject with several patches, using constant skin areas and a constant length of time and varying the amount or the concentrations of the test substances. Using a constant area of skin, a constant amount of the test substance, and a constant concentration of the test substances on several persons for a constant length of time, the degree of reactions obtained will provide a fair indication of the relative sensitivity of the persons.

SITE OF APPLICATION

While patch tests may be applied to almost any part of the body, Downing[8] notes as a result of a questionnaire that most dermatologists prefer the inner or flexor aspect of the arm or forearm. These sites are of value because of the ease of approach and because the patient can and should remove the test at any time that itching or burning is noted at the locus of the applied test material. Finally, the patient can see the test site after the suspect material has been removed. Patch tests applied to the face and neck are mentioned only to discourage the use of these sites except in rare instances.

INTERPRETATION

Correct interpretation of the patch test reaction, whether it be diagnostic, prophetic, or quantitative; closed, open, or uncovered, is of great importance in arriving at a correct diagnosis. The readings should be made at 24, 48, and 72 hours after the removal of the test material. The reactions are graded zero to five as follows[2b]: zero, no reaction; one, redness; two, redness, swelling, and papules; three, intense redness, swelling, papules, and vesicles; four, confluent blisters; and five, desquamation, oozing, and necrosis.

Positive Reactions.—The positive reaction is usually the result of primary irritation or a sensitization phenomenon. In the case of either, the reaction can be any one of the above readings, depending upon the degree of irritant or sensitization response. With the sensitizer the patch test is used as an eliciting reaction, presupposing that the sensitizing contact and the required period of incubation have already occurred. A positive reaction caused by the suspected offender indicates that the subject was sensitive at the time of the test. This decision must be based upon the exclusion of advential effects that must be well known to the examiner. For example, upon removal of the patch, a 15 minute interval should pass before the results of the test are interpreted. This time interval is necessary so that the skin may recover from the pressure of the patch test substance, i. e., absorbent fabric or solid. If this procedure is not followed, the mild erythema of pressure, the presence of dermographia, or the transient edema and erythema produced by sweat duct blockage may create an impression of a positive reaction that in reality is negative. The true erythema of the specific reaction to the test agent persists for several hours and sometimes days after the test is removed. When delayed reaction is evident 24, 48, or 72 hours after removal of the test substance, a lower order of sensitivity is suspected than if an immediate reaction is present.

False Positive Reactions.—False positive reactions[9] may occur (1) when the patient has generalized dermatitis and is nonspecifically reactive to many substances, (2) when primary irritants are used for patch testing, and (3) when the patient has been previously sensitized by exposure to a substance and is patch tested to that substance notwithstanding the fact that there has been no contact with the material for some months or at the time of developing the eruption.

Negative Reactions.—The patch test, when correctly negative, is supportive of negative clinical findings and indicates an absence of primary irritant or sensitization reaction from the test material. Under certain conditions, however, a negative test may be misleading[9] because: 1. The patch test may not have been performed with the actual offending agent. 2. The test substance may not have equalled the offending substance in strength or quantity. 3. Adjuvant physical or mechanical factors may be necessary to produce dermatitis. 4. Hyposensitivity may have developed since the patient contracted the original dermatitis. 5. In localized sensitivity the appropriate testing agent may fail to elicit a reaction in areas far removed from the site of dermatitis.

WARNINGS

Before any of the above patch tests are made, it is of prime importance for the physician making the test to understand and follow a well-recognized dictum[6] and carefully avoid the use of primary cutaneous irritants in performing the patch test. Primary irritants are agents that will cause dermatitis by acting directly on the normal skin at the site of contact if permitted to act in sufficient intensity or quantity for a sufficient length of time. They include kerosene, gasoline, and strong solutions of acids, bases, and solvents. As distinguished from primary irritants, the cutaneous sensitizers are agents, such as cosmetics, penicillin, dyes, and nail polish, that do not necessarily cause demonstrable cutaneous changes on first contact but may effect such specific changes in the skin that, after five to seven days or more, further contact on the same or other parts of the body will cause dermatitis.[6a]

Patch tests should not be applied if the patient suffers from a generalized skin disease. Testing at such a time may not only produce false positive reactions but may cause an exacerbation of the existing skin condition. Experienced dermatologists refuse to test such patients until their dermatitis is under control. While lists of recommended chemical concentrations for testing have been published,[10] the primary irritant concentration for a substance on a normal person would be higher than that for a person with eczematized skin. In using such lists of concentrations for testing, then, it must be kept in mind that, while the recommended strength may not be an irritant to the normal skin, it can act as an irritant to the abnormal skin.

In performing patch tests with substances of questionable irritating or sensitizing potential, it is well to place only a few drops or granules on the skin and observe the patient in the office for an hour. This rule is particularly significant in patch testing patients who have suffered from generalized eruptions. It is far better to take this extra time and precaution than to chance encountering an exacerbation of the eruption that can begin within a few minutes after injudicious application. Too many chemically related materials should not be applied at any one time, for if the patient has been sensitized to one of them they all may cause reactions with severe systemic complications. Proper dilution is called for, and the lists that have been published[1] should be consulted in any specific case.

SUMMARY AND CONCLUSIONS

Diagnostic patch testing, when properly performed and correctly interpreted, is of definite value in assisting to establish the cause in many cases of contact dermatitis due to sensitization. The employment and validity of the test is highly dependent upon the clinical history, the nature of the lesions, the site of the eruption, and the course of the disease. In order to insure the intelligent use of the procedure the examiner should be well acquainted with the chemical nature of the contactants handled at work, in the home, at play, in certain hobbies, and in modern therapy.[9] Proper concentration of the test material is of the utmost importance in performing the patch test. The specific technique to be employed will vary according to the substance in question. Primary irritants should not be used for patch testing except in nonirritant concentrations. The eczematized skin has a lower threshold of reactivity of specific and nonspecific nature than does the normal skin. The prophetic patch test is valuable for screening new materials for their cutaneous, irritant, and sensitizing potential. For the test to be highly effective, however, it must be followed by a usage trial. Of major importance is the fact that the patch test is continually subject to change and refinements and that absolute reliance upon its results in all cases of contact-type dermatitis is not justifiable.

---

8. Downing, J. G.: Results of a Questionnaire on Patch Tests: Analysis of Answers by 211 Dermatologists and 55 Industrial Physicians, Arch. Dermat. & Syph. **48**: 514-518 (Nov.) 1943.

9. Downing, J. G.: Are Patch Tests of Real Value in Dermatology? New England J. Med. **219**: 698-704 (Nov. 3) 1938.

10. Footnote 1, *b* and *c*.

THE JOURNAL
OF THE AMERICAN MEDICAL ASSOCIATION
535 N. DEARBORN ST. . . . . CHICAGO 10, ILL.
Editor . . . . AUSTIN SMITH, M.D.
Associate Editor . . . . JOHNSON F. HAMMOND, M.D.
Editor for Medical Literature Abstracts . GEORGE HALPERIN, M.D.
Assistant Editor . . . . WAYNE G. BRANDSTADT, M.D.

Subscription price . . *Fifteen dollars per annum in advance*
Cable Address . . . . "Medic, Chicago"

PHYSICIANS AND THE AMENDMENTS TO THE SOCIAL SECURITY ACT

A great deal of space has been devoted in the public press during the past several months to amendments to the Social Security Act. Many of the comments made have dealt with the position of the American Medical Association on the subject. These comments and a number of inquiries from individual physicians indicate that a review of the views of the medical profession is again necessary in order to remove any doubts that may remain.

It is important to remember that representatives of the American Medical Association testified on only two aspects of the bill during the 83rd Congress. They were: (1) *compulsory* coverage of physicians under the Old-Age and Survivors Insurance provision of the act and (2) the so-called waiver of premium provisions for total and permanent disability. We were and are opposed to each of these features, for sound, reasonable, and compelling reasons. The bill, which was finally enacted as Public Law 761, 83rd Congress, approved Sept. 1, 1954, did not include compulsory coverage but did include "waiver of premiums."

On at least four different occasions, the House of Delegates of the American Medical Association has gone on record as opposing compulsory coverage of physicians under Title II of the Social Security Act, the latest being at the San Francisco meeting in June of this year; however, the Association interposed no objection to voluntary coverage, a fact that is often overlooked. The original House bill (H. R. 7199) included a provision for compulsory coverage. The House Ways and Means Committee first voted to report the bill with this feature included. After it received an avalanche of telegrams, letters, and personal messages from physicians all over the United States, that committee wisely reversed its position. The bill passed the House in that form and in the Senate was referred to the Senate Finance Committee. That committee, likewise taking note of the overwhelming sentiment among physicians, decided to leave out the provisions relative to compulsory coverage. It is worth repeating that, throughout, the Association has interposed no objection to voluntary coverage.

Why has the medical profession objected to compulsory coverage under Title II? First, as Dr. F. J. L. Blasingame stated before the Senate Finance Committee on April 6, 1954, "We consider it absolutely incompatible with the free enterprise system for a group to be compulsorily covered under a governmental system of old age benefits when that group strongly and with great force opposes such coverage." Second, members of the medical profession would prefer to plan for their own security in old age rather than "leave it up to the government" to do so. Third, only a very small proportion of self-employed physicians retire at age 65—in fact, most continue working until after age 74. In 1950 about 85% of all physicians between 65 and 74 years of age were still in active practice. Thus, they would be forced to pay taxes and would receive no benefits. Fourth, to establish age 65 as the retirement age would be to place the weight of governmental incentive behind a program to encourage physicians to retire at 65. If this "encouragement" is heeded it would remove from general practice in small towns many practitioners who are urgently needed. Finally this governmental program just does not fit the economic patterns of the self-employed physician—why, therefore, should he be forced under it?

The other aspect of this legislation to which the medical profession has objected and which was included in the bill that passed, is the so-called waiver of premiums and the preservation of "insurance" rights of persons with extended total disability. This provision was in the bill as finally enacted. The objections of the profession to this provision arise in part from the realization that it will provide the mechanism for a federal cash permanent and total disability program and in turn for a full program of compulsory sickness insurance. Moreover, it introduces a relationship between the federal government and all private physicians that is profoundly disturbing. It is not unlikely that this waiver of taxation benefit will be followed by extension of the waiver of tax to the temporarily disabled and that eventually cash benefits will be provided. In fact, numerous bills have already been introduced to effect this change.

The Association is not lacking in sympathy for those who are unfortunate enough to become disabled; it just believes that the proposed method of easing their situation is a dangerous one and that an alternative method, without the dangers, is readily at hand. Instead of including wages during an active working lifetime the Association has suggested as an alternative the use of a man's income during his 5 or 10 best years in computing retirement benefits, with an allowance in the form of increment years for each year of gainful employment. We believe this proposal should have been thoroughly and sympathetically explored.

We believe that our position on these two subjects is eminently sound and reasonable. Those who criticize the Association's position on compulsory coverage seem to overlook the fact that no objection was raised to voluntary coverage, and those who criticize the Association's position on the "waiver of premiums" provision overlook the fact that a reasonable alternative was suggested. It is vitally important for the medical profession to continue to stand on principle and what is right in these matters rather than what is expedient.

PATCH TESTING

Introduced by Jadassohn,[1] developed by Bloch,[2] and popularized by Wise and Sulzberger,[3] the patch test immediately intrigued insurers and members of industrial accident commissions. They thought the patch test would be the real answer as to whether a case of dermatitis venenata was occupational in origin. Thereafter many members demanded proof in the form of a positive test before granting compensation to a worker suffering from an alleged occupational dermatitis; however, the haphazard use and misinterpretation of these tests, as well as the severe untoward reactions, soon caused doubt regarding their practicability. One case,[4] in which a commissioner insisted a patch test be made with a notorious sensitizer, caused such disability that it involved untold suffering to the patient and resulted in conflicting legal opinions regarding the liability of the insurer to the claimant and physician and the rights of the claimant over the physician and insurer.

The reliability of these tests depends on their proper performance and intelligent interpretation. So great was the controversy regarding their value that 211 dermatologists and 55 industrial physicians were interrogated as to the usefulness of the test. The final conclusions from this questionnaire indicated that "patch tests, while they have their limitations, are of definite value. Careful taking of the history, knowledge of the patient's exposures, personal investigations and study of the various contacts will reduce the necessity of routine patch tests, but when needed they will continue to be of distinct value in dermatology."[5]

The prophetic patch test is also valuable but also has its limitations. Considering the many chemicals and materials used in industry, especially the textile industry, both the prophetic and the routine patch test are extremely useful. First of all, these tests should reveal the causative factor among the workers preparing the material for future wearing; secondly, these materials should be properly tested before being sold to the public; otherwise, they may cause great discomfort and disability to the wearers. If the tests are done in a haphazard manner, with varying interpretation from physicians as to whether a chemical or material has highly sensitizing or irritating properties, great confusion results. Therefore, there should be a standard routine for the test. The procedure can be performed by almost anyone. Proper interpretation of the test is, however, most important. The misuse of the prophetic test has led to serious complications for manufacturers who are investigating the sensitizing effects of a new material. Recent differences of opinion as to whether a new material was harmless to wearers prevented one company from putting the very costly material on the market.

Inasmuch as there has been little recent publicity regarding the patch test and inasmuch as in many areas it has fallen into disuse through misuse, the Committee on Occupational Dermatoses of the Council on Industrial Health deemed it of value to review the subject. Their report is published in this issue (page 497). From time to time this committee will try to stress the need for recognition and prevention of well-known industrial dermatoses and also to keep physicians and interested persons informed regarding industrial dermatology. The committee is not new but has been in existence for several years. Both its former and its present members have done a tremendous amount of work in the prevention of occupational dermatoses, most of which can be prevented. Prevention is the major problem stressed by the committee.

TETANUS IMMUNIZATION

Tetanus toxoid cannot be used to prevent tetanus if the patient has never before received the material. Active immunity, induced by tetanus toxoid, is a slow process that requires weeks or months. In case the patient has not received the last dose of the immunizing series at least one week before injury, an adequate dose of antitoxin is indicated. Reliance cannot be placed on natural infection with the tetanus bacillus to act as a booster dose in a patient previously given the entire series of injections of tetanus toxoid. The stimulus from a possible tetanus bacillus infection is inadequate. There is no substitute, with the possible exception of tetanus antitoxin, for a booster dose of tetanus toxoid when definitely indicated. Tetanus toxoid must be administered despite recovery from one or more attacks of tetanus. Strangely, tetanus is not an immunizing disease. Emil von Behring's laboratory assistant sustained three attacks of tetanus, from which he recovered. Accidental exposure to the tetanus bacillus, although repeatedly experienced, does not confer active immunity to tetanus. In contrast with diphtheria, herd immunization, by repeated subclinical exposure, does not exist. Under specified circumstances, tetanus antitoxin (minimum dose of 10,000 American units) must be used in addition to the usual booster dose of tetanus toxoid. These indications are: (1) poor general health or the presence of diseases of a debilitating nature; (2) considerable blood loss at the time of injury, as in military combat or vehicle accidents; (3) delay of several days in the administration of an indicated booster dose of toxoid; and (4) the presence of local lesions (compound fractures, severe lacerations, etc.) considered very likely to result in clinical tetanus.

In contrast to what has just been indicated, when a patient has not received at least one injection of tetanus toxoid, antitoxin and toxoid should not be administered at the same time. The toxoid will not interfere with the antitoxin; but the antitoxin will interfere with the toxoid. The toxoid must be administered later, at a time when the passive immunity, conferred by antitetanic serum,

---

1. Jadassohn, J., in Sulzberger, M. B., and Wise, F.: The Contact or Patch Test in Dermatology: Its Uses, Advantages and Limitations, Arch. Dermat. & Syph. 23:519-531 (March) 1931.
2. Bloch, B.: The Role of Idiosyncrasy and Allergy in Dermatology, Arch. Dermat. & Syph. 19:175-197 (Feb.) 1929.
3. Sulzberger, M. B., and Wise, F.: The Contact or Patch Test in Dermatology: Its Uses, Advantages and Limitations, Arch. Dermat. & Syph. 23:519-531 (March) 1931.
4. Downing, J. G.: Legal Aspects of Patch Tests, Arch. Dermat. & Syph. 44:63-65 (July) 1941.
5. Downing, J. G.: Results of a Questionnaire on Patch Tests: Analysis of Answers by 211 Dermatologists and 55 Industrial Physicians, Arch. Dermat. & Syph. 48:514-518 (Nov.) 1943.

32865

has reached a minimal level. The disappearance of the inhibiting effect of passively received antitoxin is more important in the early development of active immunity from toxoid than the time at which the injection of toxoid is started. An injection of 1,500 American units confers titratable immunity for 2 to 3 weeks, 10,000 units for 6 to 10 weeks, and 100,000 units for 8 to 11 and possibly more weeks. Every patient who receives tetanus antitoxin should be called back to the physician's office to receive tetanus toxoid at the appropriate time. Otherwise, the hazard of acute serum sickness must be anticipated in the event of indicated injections of tetanus antitoxin. Some type of constant reminder, such as a visible index card system, should be used lest the physician forget. The body retains an impression from each injection of antigen (toxoid). Consequently, when the indicated immunization program has not been completed, one may "carry on" as though no interference with the program has occurred; it is not necessary to start all over again. Thus, if one injection of potent tetanus toxoid has been administered, several years later the second dose may be given, thereby completing the series. Obviously, patients should not be informed of this fact, except when such delay has supervened, so that they will not be lax about completing a series of injections.

DOGS DO NOT HAVE PINWORMS

Much has been written on diseases of animals transmissible to man. This is an important subject, but the coin has another side: some parasites found in man do not originate or spend any part of their life cycle in animals, domestic or otherwise. Very little has been written on this subject, but Turk[1] has written a brief informative account of his experiences with the false accusations of animals, usually pet dogs or cats. Some strange objects passed in the feces of one patient and thought to be parasite ova transmitted by a pet dog were shown to be grape seeds. The parents of a child who had a dog and who had been treated for roundworms kept such a close vigil on the child's stools that they sent a supposed worm to the laboratory. They were relieved but somewhat chagrined to find that the "worm" was an indigestible fiber from a string bean. Another patient with a great deal of hair on his forearms and a great love of horses found some strange parasites on the dorsum of his wrists. These proved to be pubic lice and were not acquired, as he believed, from his favorite mount.

A physician treating a child for pinworms is ill advised to recommend that the parents of the child get rid of the pet dog or cat. Enterobius vermicularis occurs only in man. Such pinworms as may be found in any other animal are of an entirely different species and are peculiar to that animal only. A better knowledge of parasitology, entomology, and helminthology on the part of physicians would help to prevent the types of error cited, but in any case an innocent pet should not be blamed until convincing evidence has been produced and the suspected parasites positively identified.

"HOURLY WAGES" OF PHYSICIANS AND DENTISTS

The recent series of articles in the *Journal of the American Dental Association* summarizing the results of a survey conducted by its Bureau of Economic Research and Statistics of the hours, incomes, and other aspects of dental practice indicates that the average work week of the dentist in 1952 was 43.3 hours.[1] The 1950 survey of the dental profession set the average at 42.2 hours. The Bureau of Medical Economic Research of the American Medical Association reviewed the data on hours worked by physicians, furnished by 30,000 physicians in the survey of their 1949 incomes; this survey was conducted jointly by the Bureau and the United States Department of Commerce, but neither has published the data on hours worked. Physicians averaged more than 56 hours a week, general practitioners more than 60 hours, and some specialists, 50 to 56 hours. It is interesting to compare the hourly earnings of dentists and physicians by distributing the net annual earnings over the number of hours worked, with the number of hours computed according to prevailing practices of large employers in the United States regarding overtime pay. Usually, the employer allows 12 hours' pay for the first 8 hours in excess of 40 hours a week and 16 hours' pay for the second 8-hour overtime period; that is, employees receive 68 hours of pay for 56 hours of work. On this basis, the average "hourly wage" of physicians was $3.13 in 1949 and, on the basis of small sample studies of the U. S. Department of Commerce, $3.26 in 1950 and $3.54 in 1951. The comparable "hourly wage" of dentists was $3.01, $3.12, and $3.31. These averages were computed on the basis of 68 hours a week for physicians and 45 hours a week for dentists. The annual net earnings were prorated over 52 weeks, although self-employed physicians and dentists worked fewer than 52 weeks. For the purpose of comparing their hourly earnings with those of employed persons, however, it is necessary to allow several weeks for vacation, holidays, and sick leave. As a matter of fact, office employees at A. M. A. headquarters are allowed approximately 25 days, or 5 weeks a year, for vacation, holidays, and sick leave. Incidentally, there is evidence that physicians work more regularly on holidays than do dentists. Even if the annual net earnings were prorated over 49 weeks instead of 52 the 1951 "hourly wages" would be increased only from $3.54 to $3.75 for physicians and from $3.31 to $3.51 for dentists. Within this frame of reference of prevailing rules regarding overtime pay, it appears that psysicians and dentists are earning less than $4 an hour and that the long work week, particularly of physicians, should be a major factor in any economic analysis of professional incomes.

---

[1] Turk, R. D.: Parasites Not Transmissible from Animals to Man, North American Vet. 35:609-610 (Aug.) 1954.

[1] The first article in the series, under the general title, The 1953 Survey of Dental Practice, was published in the December, 1953, issue of the Journal of the American Dental Association and the summary article in August, 1954 (vol. 49, pp. 221-224).

APPROVED EXAMINING BOARDS IN MEDICAL SPECIALTIES

ADVISORY BOARD FOR MEDICAL SPECIALTIES

B. R. Kirklin, Secretary-Treasurer
Rochester, Minn.

Because of the overwhelming amount of material, the following pages concerning the American specialty boards are continued in this issue from the annual Internship and Residency Number of The Journal, *Sept. 25.*—Ed.

The Advisory Board for Medical Specialties was organized in 1933-1934 to coordinate graduate medical education and certification of medical specialists in the United States and Canada. A few specialty boards had been functioning actively and successfully for a number of years prior to the organization of the Advisory Board for Medical Specialties. Their purposes were, primarily, to establish minimum standards of graduate education and training requirements for physicians representing themselves to the public as being specialists, with certification by the boards of candidates after they had been able successfully to pass the boards' examinations. Secondarily, these boards hoped to improve the general standards of graduate medical education and facilities for special training.

It was soon recognized that some formal and official plan of organization must be established. It was clearly essential that an examining board must have the official sanction of the national societies in its given specialty as well as that of its section of the American Medical Association, but there was, at that time, nothing to prevent unofficial groups from organizing examining boards and using the title American board. In order to avoid duplication of effort as well as to coordinate the work of the several boards and other interested groups into a concise and homogeneous plan for betterment, it was deemed advisable to create an advisory board to give consideration to those problems common to all and to represent all organizations concerned.

The Advisory Board is composed of two representatives from each of the approved examining boards in the medical specialties and such other national organizations as are interested in the education, examination, and certification of medical specialists. These representatives are duly elected to this body.

The number of organizations comprising the Advisory Board for Medical Specialties remains the same; namely, 18 specialty boards and 4 other organizations interested in graduate medical education. The total voting membership is still 44. The organizations and their representatives are as follows:

CURRENT MEMBERSHIP IN THE ADVISORY BOARD FOR MEDICAL SPECIALTIES—1954-55

Association of American Medical Colleges

William S. Middleton	Stanley E. Dorst *

The American Hospital Association

Frank R. Bradley	Robin C. Buerki *

The Federation of State Medical Boards of the U. S. A.

Creighton Barker	Walter L. Bierring *

The National Board of Medical Examiners

John P. Hubbard	Robert W. Keeton *

The American Board of Ophthalmology

William L. Benedict	Edwin P. Dunphy *

The American Board of Otolaryngology

Frederick T. Hill	Dean M. Lierle *

The American Board of Obstetrics and Gynecology

Herbert E. Schmitz	Robert L. Faulkner *

The American Board of Dermatology and Syphilology

Nelson Paul Anderson	Anthony C. Cipollaro *

The American Board of Pediatrics

Lee Forrest Hill	John McK. Mitchell *

The American Board of Psychiatry and Neurology

Bernard J. Alpers	Francis Gerty

The American Board of Radiology

H. Dabney Kerr	B. R. Kirklin *

The American Board of Orthopedic Surgery

Clarence H. Heyman	Harold A. Sofield *

The American Board of Urology

Rubin Flocks	Harry Culver *

The American Board of Internal Medicine

Walter L. Palmer	Henry M. Thomas, Jr.

The American Board of Pathology

Robert A. Moore	William B. Wartman *

The American Board of Surgery

Walter G. Maddock	John B. Flick *

The American Board of Anesthesiology

R. J. Whitacre	Curtiss B. Hickcox *

The American Board of Plastic Surgery

W. H. Steffensen	Bradford Cannon

The American Board of Neurological Surgery

Francis C. Grant	Leonard T. Furlow *

The American Board of Physical Medicine and Rehabilitation

Robert L. Bennett	Earl C. Elkins*

The American Board of Preventive Medicine

William P. Shepard	Ernest L. Stebbins *

The American Board of Proctology

Walter A. Fansler	Louis A. Buie *

Officers and Committees—1954

Robert A. Moore, American Board of Pathology, President.

Walter Palmer, American Board of Internal Medicine, Vice-President.

B. R. Kirklin, American Board of Radiology, Secretary-Treasurer

Members of the Executive Committee
- Term to expire in 1955: Robin C. Buerki, American Hospital Association
- Term to expire in 1956: Robert L. Faulkner, American Board of Obstetrics and Gynecology

Committee on Standards and Examinations
- Harold A. Sofield, American Board of Orthopedic Surgery, Chairman
- Louis A. Buie, American Board of Proctology
- John McK. Mitchell, American Board of Pediatrics

Committee on Audit and Finance
- Francis Gerty, American Board of Psychiatry and Neurology, Chairman
- Walter L. Palmer, American Board of Internal Medicine

Representatives on Advisory Council on Medical Education
- Ernest L. Stebbins, American Board of Preventive Medicine
- Anthony C. Cipollaro, American Board of Dermatology and Syphilology

---

* Corresponding member.

Examining and certifying boards in 19 specialties have been approved by the Council on Medical Education and Hospitals of the American Medical Association and the Advisory Board for Medical Specialties on the basis of minimal standards governing accreditation of specialty boards as formulated by the Council.

The primary purposes of the boards are (1) to conduct investigations and examinations to determine the competence of voluntary candidates for certificates issued by the respective boards, (2) to grant and issue certificates of qualification to candidates successful in demonstrating their proficiency, (3) to stimulate the development of adequate training facilities, (4) to aid in evaluating residencies and fellowships under consideration by the Council on Medical Education and Hospitals of the American Medical Association, and (5) to advise physicians desiring certification as to the course of study and training to be pursued.

The boards are in no sense educational institutions, and the certificate of a board is not to be considered a degree. It does not confer on any person legal qualifications, privileges, or a license to practice medicine or a specialty. The boards do not purport in any way to interfere with or limit the professional activities of any licensed physician, nor do they desire to interfere with any practitioners of medicine in any of their regular or legitimate duties.

Two boards certify candidates in subspecialties. The American Board of Internal Medicine certifies in allergy, cardiovascular disease, gastroenterology, and pulmonary diseases. The American Board of Pediatrics certifies in allergy. Certification in the primary field is a requirement for certification in the subspecialties. The Board of Thoracic Surgery, which is organized as an affiliate board of the American Board of Surgery, requires certification in surgery as a prerequisite to certification in thoracic surgery.

Certificates in special divisions of their specialty are conferred by six boards. The American Board of Obstetrics and Gynecology will issue certificates in obstetrics or gynecology only. The American Board of Otolaryngology grants a limited certificate in endoscopy. The American Board of Pathology issues certificates in pathological anatomy, clinical pathology, a combination of these two fields, pathological anatomy and clinical microbiology, clinical microbiology and clinical chemistry, clinical bacteriology, neuropathology, and clinical microbiology. The American Board of Preventive Medicine issues certificates in public health and aviation medicine. The American Board of Psychiatry and Neurology issues separate certificates in psychiatry and in neurology, or a combined certificate for those qualified in both fields. This board also issues supplementary certificates in psychiatry and in neurology. The American Board of Radiology issues certificates in radiology, roentgenology, therapeutic radiology, therapeutic roentgenology, diagnostic roentgenology, radium therapy, radiological physics, x-ray and radium physics, and medical nuclear physics.

Each of the boards has published a booklet containing a list of its officers and a brief statement of its organization, purposes, and the qualifications that determine eligibility for certification. A summary of the current data pertaining to each board and the names of its officers are reproduced in the following pages.

There is included in this section a specific statement from each of the boards regarding allowances of credit for service in the armed forces during the present emergency. A résumé of medical education and national defense was published in the Education Number of THE JOURNAL.[1]

Table 1 contains a list of the approved specialty boards, the year of their activation, the number of certificates issued prior to July 1, 1953, and the total number of candidates certified to June 30, 1954. Figures are also given in these two categories showing the numbers certified in the subspecialties and finally the available figures pertaining to special certification by the boards in obstetrics and gynecology, otolaryngology, pathology, preventive medicine, psychiatry and neurology, and radiology.

On July 1, 1953, there were 52,486 physicians certified by the 19 boards. During the year July 1, 1953, to June 30, 1954, a total of 4,133 certificates were issued. Up to this latter date 56,619 physicians have been certified.

On July 1, 1953, a total of 1,308 certificates in subspecialties had been awarded. An additional 54 were awarded in the ensuing year, bringing the total number of certificates issued in the subspecialties to 1,362 on June 30, 1954. Prior to July 1, 1953, the six boards mentioned had issued 9,848 special certificates. During the year ending June 30, 1954, 1,021 special certificates were issued, bringing the total number awarded to that date to 10,869.

The number of specialists certified each year during the past 15 years by all boards and the cumulative totals are recorded in table 2. Up to June 30, 1954, a total of 56,619 certificates were issued. This does not represent the number of living specialists, but the total number of certificates issued.

The sixth edition of the "Directory of Medical Specialists," compiled by the Advisory Board for Medical Specialties, published in 1953 by the A. N. Marquis Company, Chicago, contains biographic information on the educational background of each living specialist, including those retired from practice, certified by an American board.

CREDIT FOR MILITARY SERVICE

At the suggestion of the Joint Committee on Medical Education in Time of National Emergency, the Advisory Board for Medical Specialties conducted a survey to determine the amount of credit for service in the armed forces during the present emergency that would be given toward specialty board certification. The inquiry addressed to the boards contained the following questions:

> Will your specialty board give preference to those candidates wishing to be examined before going overseas or entering military service?
>
> How much, if any, credit toward your training and/or experience requirements will your board allow candidates while in military service?

---

[1] Medical Education in the United States and Canada, J. A. M. A. **156**: 137 (Sept. 11) 1954.

TABLE 1.—*Approved Examining Boards in Medical Specialties*

Key No.	Name of Board	Year of Activation	Total Certificates Awarded to July 1, 1953	Total Certificates Awarded to June 30, 1954
1.	American Board of Pediatrics	1933	4,529	4,964 ‡
2.	American Board of Psychiatry and Neurology	1934	4,646	4,931
3.	American Board of Orthopedic Surgery	1934	2,207	2,354
4.	American Board of Dermatology and Syphilology	1932	1,512	1,603
5.	American Board of Radiology	1934	4,341	4,649
6.	American Board of Urology	1935	1,809	1,921
7.	American Board of Obstetrics and Gynecology	1930	3,908	4,291
8.	American Board of Internal Medicine	1936	8,404	9,062
9.	American Board of Pathology	1936	2,491	2,727
10.	American Board of Ophthalmology	1917	3,880	4,051
11.	American Board of Otolaryngology	1924	4,964	5,073
12.	American Board of Surgery	1937	6,158	6,817
13.	American Board of Anesthesiology	1937	1,023	1,185
14.	American Board of Plastic Surgery	1937	275	313
15.	American Board of Neurological Surgery	1940	488	553
16.	American Board of Physical Medicine and Rehabilitation	1947	239	240
17.	American Board of Preventive Medicine	1948	1,068	1,255
18.	American Board of Proctology	1949	144	165
19.	Board of Thoracic Surgery (An Affiliate of the American Board of Surgery)	1948	397 *	465 *
	Totals	....	52,486	56,619
	Certification in Subspecialties			
	American Board of Internal Medicine			
	Allergy		144	144
	Cardiovascular Disease		509	522
	Gastroenterology		298	328
	Pulmonary Diseases		218	222
	Totals		1,169	1,216
	American Board of Pediatrics			
	Allergy		58	65
	American Board of Surgery			
	Proctology		81 †	81 †
	Totals		1,308	1,362
	Special Certification			
	American Board of Obstetrics and Gynecology			
	Obstetrics		9	17
	Gynecology		6	10
	American Board of Otolaryngology			
	Endoscopy		4	.....
	American Board of Pathology			
	Pathologic Anatomy		516	665
	Clinical Pathology		211	262
	Pathologic Anatomy and Clinical Pathology		103	133
	Pathologic Anatomy and Clinical Microbiology		1	1
	Clinical Microbiology and Clinical Chemistry		3	3
	Clinical Bacteriology		2	2
	Neuropathology		5	7
	Clinical Microbiology		1	2
	Totals		861	1,075
	American Board of Preventive Medicine			
	Public Health		57	53
	Aviation Medicine		.....	134
	Totals		57	187
	American Board of Psychiatry and Neurology			
	Psychiatry		3,402	3,660
	Neurology		298	316
	Psychiatry and Neurology		946	955
	Totals		4,646	4,931
	American Board of Radiology			
	Radiology		2,758	3,017
	Roentgenology		892	915
	Diagnostic Roentgenology		477	495
	Therapeutic Radiology		151	152
	Therapeutic Roentgenology		5	5
	Radium Therapy		5	7
	Radiological Physics		34	38
	X-Ray and Radium Physics		15	17
	Medical Nuclear Physics		4	3
	Totals		4,341	4,649
	Totals		9,848	10,869

* Included in totals for American Board of Surgery.
† Independent board established in 1949.
‡ One special certificate issued to foreign candidate.

In reply to the first question all boards answered in the affirmative. The specialty boards have not lowered their requirements because of the military emergency, but all boards have indicated they will grant some credit for military service. The specialty boards have indicated such allowances as follows:

Anesthesiology.—No formal training credit is granted for military service unless the physician is assigned to a service hospital with an approved residency training program. Practice time will, however, be granted for military service if the physician is assigned to the anesthesia service.

Dermatology and Syphilology.—Students in training who have served as physicians in the Army, Navy, or U. S. Public Health Service may submit a supplementary application, obtainable from the executive secretary, for *possible credit toward experience. This application is not* obligatory, but if submitted it must be done prior to or at the time of filing application for examination. It will not be considered until the preliminary registration has been filed. Since the application must be circulated through a committee whose members may be widely separated, several months are often required for a decision. Full-time dematological military service may be credited in some part toward training, at the discretion of the board, provided it was under the direct supervision of a recognized specialist and provided a significant portion of approved training was completed before the service concerned. The board strongly urges that the candidate supplement his military service by further approved dermatological training before examination. Medical service in the armed forces not credited as training may be credited in part toward the two years of additional dermatological experience required for certification, the amount of credit depending on the circumstances.

TABLE 2.—*Annual Specialty Board Certification, 1940-1954*

Year (Ended March)	Number of Board in Existence	Number Certified	Cumulated Totals
1940	14	.....	15,853
1941	15	2,085	17,938
1942	15	1,756	19,694
1943	15	2,172	21,866
1944	15	1,578	23,444
1945	15	1,308	24,752
1946	15	1,320	26,072
1947	15	2,424	28,496
1948	16	3,002	31,498
1949 (June 30)	19*	4,479	35,977
1950 (June 30)	19	3,827	39,804
1951 (June 30)	19	4,552	44,346
1952 (June 30)	19	4,118	48,464
1953 (June 30)	19	4,022	52,486
1954 (June 30)	19	4,133	56,619

* One board, the American Board of Proctology, did not certify any candidates during this period.

Internal Medicine.—Active duty as a commissioned officer in the armed forces of the United States from June 1, 1950, to July 1, 1954, may be applied as one year of residency credit or one year of practice credit regardless of assignment. Service beyond one year during this interval may only be applied as practice credit on certification by former chiefs of service that assignments of candidates were in the field of internal medicine on a full-time basis in the care of clinical patients, largely on their own responsibility. Active duty in the armed forces as a commissioned officer after July 1, 1954, may not be applied as residency credit unless the candidate has served officially as a resident in a hospital approved for residency training by the Council on Medical Education in internal medicine or in the medical subspecialties recognized by this board. Active duty in the armed forces as a commissioned officer after July 1, 1954, may be applied as practice credit for one year or more on certification by present or former chiefs of service that assignments were in the field of internal medicine on a full-time basis, in the care of clinical patients largely on one's own responsibility. The requirements governing residency credit and practice credit for active duty in the armed forces from Dec. 8, 1941, to Jan. 1, 1947, will remain the same as those governing credit from June 1, 1950, to July 1, 1954, as outlined above.

Neurological Surgery.—The board makes no specific statement regarding military service. This matter is taken up individually with each applicant.

Obstetrics and Gynecology.—Credit will be given for time spent in an obstetric-gynecological service in an Army or a Navy hospital under supervision on the same basis as a preceptorship, if these departments are supervised by diplomates of the board or recognized obstetricians-gynecologists. Full residency credit may be obtained if such hospital is approved for residency training. The board will review and give consideration to each individual case. Special request must be made for such credits.

Ophthalmology.—No stated credit. Each case is decided according to the time the candidate has spent assigned to a military hospital in ophthalmology and on other factors.

Orthopedic Surgery.—Up to one year of residency credit is given. Each case is determined on its own merits.

Otolaryngology.—Credit is given, but each case is determined on its own merits.

Pathology.—Allows liberal credit toward training when assigned to department of pathology, but candidates must first have had a minimum of one year residency in an approved civilian department of pathology.

Pediatrics.—One year of credit, regardless of assignment, toward two year practice requirement.

Physical Medicine and Rehabilitation.—Maximum of one year credit in related field; full credit if in the specialty.

Plastic Surgery.—Credit given on individual basis, considered on candidate's merits.

Preventive Medicine.—Credit for training and experience in public health or aviation medicine while in military service will be considered on an individual basis, depending on the type of service.

Proctology.—One year toward completion in fulfillment of the general surgical residency.

Psychiatry and Neurology.—For military duty after Jan. 1, 1954, only experience credit will be granted for full-time psychiatric and/or neurological duties. Training credit will be granted for residency assignments in regularly approved training programs.

Radiology.—Maximum of one year's credit if assigned to full-time radiological duties.

Surgery.—If a candidate has served in a government hospital or hospitals fully approved for residency training, such training will be acceptable to the board. Military credit may be extended to those candidates who have served in nonapproved hospitals provided that the candidate has had a satisfactory surgical assignment with adequate and diversified clinical material and provided further that his work in surgery is carried out under the supervision of a surgeon acceptable to the board. Any credit extended in the latter category will be considered preceptorship credit and not residency credit.

Thoracic Surgery.—Credit for military service will be decided on an individual basis.

Urology.—No credit for training but credit for one year of practice requirement if training was complete when entering service.

Medical Officer's Professional Training Record.—The Surgeons General of the armed services have distributed a booklet prepared with the assistance of the Council and the Advisory Board for Medical Specialties which is designed to help prospective candidates for certification to maintain an accurate account of work done in the military service. This record will constitute part of the credentials to be submitted to the board on application for certification. The booklet has been printed by the Office of the Secretary of Defense and is distributed by the offices of the Surgeons General to the personnel of their departments. It is highly important that prospective applicants obtain a copy of the "Medical Officer's Professional Training Record" and that they submit their credentials for evaluation by the respective specialty board.

AMERICAN BOARD OF ANESTHESIOLOGY

Board of Directors

Meyer Saklad, President, Providence, R. I.
Rolland J. Whitacre, Vice-President, East Cleveland, Ohio.
Donald L. Burdick, New York.
Stuart C. Cullen, Iowa City.
Frederick P. Haugen, Portland, Ore.
John S. Lundy, Rochester, Minn.
Milton C. Peterson, Kansas City, Mo.
Harvey C. Slocum, Galveston, Texas.
Scott M. Smith, Salt Lake City.
Edward B. Tuohy, La Canada, Calif.
Curtiss B. Hickcox, Secretary-Treasurer, Hartford, Conn.

Past Directors

*Charles F. McCuskey, Los Angeles.
*E. A. Rovenstine, New York.
Henry S. Ruth, Haverford, Pa.
*H. Boyd Stewart, Tulsa, Okla.
*Ralph M. Tovell, Hartford, Conn.
*Ralph M. Waters, Orlando, Fla.
John W. Winter, San Antonio, Texas.
*Paul M. Wood, New York.
*Philip D. Woodbridge, Greenfield, Mass.
*T. Drysdale Buchanan, M.D. (deceased).

---

*Past Presidents.

CERTIFICATION

1. *Method of Making Application.*—Application for certification may be made after a physician has completed one year of approved training. Application must be made to the secretary on a form prescribed by the board, procured only on written request of the applicant, and must be filed at least six months prior to the date of examination.

The secretary cannot make any eligibility rulings. These are made only by the entire board on recommendation of the appropriate committees after reviewing the candidate's formal application.

2. *Requirements.*

A. Each applicant before he shall become eligible for certification in anesthesiology, must:

1. Have graduated from a medical school recognized by the Council on Medical Education and Hospitals of the American Medical Association and have completed an internship of not less than one year in a hospital approved by the same Council, or its equivalent.*

2. Establish in a manner satisfactory to the board that:
   (*a*) He is a physician duly licensed by law to practice medicine.
   (*b*) He is of high ethical and professional standing.
   (*c*) He has received adequate special training in anesthesiology.

3. Submit proof to the board that he has limited his practice to anesthesiology as a specialty for five calendar years of which at least two have been in formal clinical training approved by the board and that he intends to continue to limit his practice to anesthesiology.

4. Prove to the satisfaction of the board by such written, survey, oral and practical examinations as the board may prescribe that he is qualified to practice anesthesiology.

5. Personally prepare such case history abstracts of personally conducted procedures pertaining to anesthesiology as the board may specify.

B. Each applicant shall be classified for the purpose of examination and shall be examined in such a manner and under such rules as the board may prescribe. The board, acting as a committee of the whole, reserves the right to reject an applicant for any reason deemed advisable and without stating the same, and the action of the board shall be final.

*Note: The American Board of Anesthesiology, after due consideration, has adopted the following policies concerning class B and foreign medical school graduates:

1. Graduates of class B medical schools are not eligible to take the board examinations.

2. Graduates of foreign medical schools not approved by the American Medical Association before admission to our examinations must:
   (*a*) Pass the national board examination.
   (*b*) Be fully licensed to practice medicine in the state in which they are practicing.

3. Graduates of medical schools outside of the United States approved by the American Medical Association before admission to our examinations must be fully licensed to practice medicine in the state in which they are practicing.

4. The expense of surveying and/or giving practical examinations outside of the United States will be borne by the candidate. The approximate amount of such funds to be paid by the candidate will be determined by the secretary and must be paid in United States currency to the American Board of Anesthesiology in advance.

It will also be agreed by the candidate and the board that any readjustment indicated will be done after determination of the actual expense of conducting the survey and/or practical examination. It further will be agreed by a notarized statement from the candidate that the payment of such amount will incur no obligation of any nature on the part of the American Board of Anesthesiology. It is also understood that the board reserves the right to determine whether surveys and/or practical examinations may be conducted in any country outside the United States of America.

3. *Examinations are conducted as follows:*

A. Written Examination: Eligible applicants may take this examination on completion of two years of clinical training approved by the board. Written examinations are conducted every year in about 16 locations throughout the United States on the third Friday in July. Written examinations are of the multiple choice type covering the following subjects: anatomy, chemistry and physics, pharmacology, pathology and physiology. A passing grade, as determined by the board, is required.

B. Survey Examination: Started in 1949 this examination is conducted by one or more diplomates of the board who visit the applicant in his own locality to observe him in the practice of anesthesiology. The examiner may interview other persons in the community to determine whether the candidate is of high ethical and professional standing. This examination is conducted upon completion of four years limited to anesthesiology (including two years of approved clinical training), and successful completion of the written examination. The board may require more than one survey examination.

C. Oral Examination: Upon completion of the survey examination and five years' limitation of practice to anesthesiology the candidate's qualifications are reviewed and he may be declared eligible to appear for the oral examination. However, at least six months must elapse between the written and oral examination. Examinations are conducted semiannually, in April and October. Examiners consist of directors of the board, plus diplomates who assist as associate examiners. Oral examinations cover all phases of anesthesiology, including the basic sciences and clinical applications.

D. Practical Examination: At the discretion of the board practical demonstrations may be required of the management of the candidate's clinical practice in his local surroundings. This may include inspection of clinical records, reports of departmental activities, library facilities, available apparatus and demonstrations of application of anesthetic agents, methods and all technics included in anesthesiology. The candidate will also be appraised as to whether he is of high ethical and moral standing in his community.

Applicants are entitled to three consecutive opportunities at yearly intervals to satisfactorily complete the written examination. This three year period begins on the date an applicant is first declared eligible for the written examination.

Applicants are entitled to no more than two survey examinations. Should the first survey report be declared unfavorable a candidate will not be permitted to appear for the oral examination until a favorable report is received. At least one year must elapse before a resurvey examination is given.

Oral examinations are given at six month intervals. An applicant is entitled to one oral examination each year for a three year period. In the event that a candidate fails an oral examination, at least 12 months must elapse before he may reappear for the oral examination. The three year period begins on the date an applicant is first declared eligible for the oral examination.

Failure to take an examination constitutes an opportunity just as much as failure to pass an examination. Applicants who fail to exercise the privilege of written or oral examination and/or who fail to pass any part of the written or oral examination within the three year period will be required to file a new application under the current rules and regulations, pay a new application fee, and submit to both written and oral examination.

A fee of $25 will be charged for each repeat in the written and oral examination. The board may, however, at its discretion deny a candidate the privilege of reexamination.

The board reserves the right to limit the number of candidates to be admitted to any examination.

REAPPLICATIONS

Applicants whose original applications were declared void through failure to take the examination will be required to file a new application under the current rules and regulations, pay a new application fee, and submit to both written and oral examination. Applicants whose original applications were declared void through failure to pass the examination must submit proof of an additional year of approved training before their reapplications will be considered. This reapplication will be considered under the current rules and regulations, and the applicant must pay a new application fee and submit to both written and oral examination.

FEE

The fee shall be $125. At least $50 shall be paid on filing the application, of which sum $35 shall be returned if the candidate is not accepted for examination. The remainder ($75) shall be paid before taking the examination.

The board is a nonprofit organization. The fees for examination and certification have been computed on a basis of cost of maintaining an administrative office and conducting examinations. The board reserves the right to increase the fee when necessary.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY

Nelson P. Anderson, President, Los Angeles.
George M. Lewis, Vice-President, New York.
J. Lamar Callaway, Durham, N. C.
Marcus R. Caro, Chicago.
Arthur C. Curtis, Ann Arbor, Mich.
Beatrice M. Kesten, New York.
John H. Lamb, Oklahoma City.
Francis W. Lynch, St. Paul.
Anthony C. Cipollaro, Secretary-Treasurer, New York.
Miss Janet Newkirk, Executive Secretary, 66 E. 66th St., New York 21.

ADVISORY MEMBERS

Harold N. Cole, Cleveland.
Charles C. Dennie, Kansas City, Mo.
Howard Fox, New York.
George M. MacKee, Stamford, Conn.
Henry E. Michelson, Minneapolis.
Paul A. O'Leary, Rochester, Minn.
Donald M. Pillsbury, Philadelphia.
Francis E. Senear, Chicago.
Bedford Shelmire, Dallas, Texas.
Arthur W. Stillians, Chicago.
Fred D. Weidman, Philadelphia.

PURPOSES

The board was formed primarily to establish standards of competence for physicians who seek recognition as specialists in dermatology and syphilology. It sets minimum requirements of education and graduate training and takes a keen interest in the development of facilities to provide this training. To this end, the board appraises institutions and persons wishing to train specialists in the field and lends its approval to those offering adequate programs. It examines and certifies qualified applicants who voluntarily comply with its requirements and supplies lists of those certified to the American Medical Association, the Directory of Medical Specialists, and other appropriate organizations and publications. The board assumes the responsibility of setting the standards to be met, but upon the candidate rests the responsibility of acquiring the knowledge to fulfill these standards.

REQUIREMENTS FOR ELIGIBILITY FOR EXAMINATION

I. General Requirements

1. High ethical and professional standing.

2. Graduation from a medical school approved by the Council on Medical Education and Hospitals of the American Medical Association. Graduates of schools not on the approved list may be eligible provided they first take and pass the examinations of the National Board of Medical Examiners.

3. Satisfactory completion of an internship of not less than one year in a hospital approved by the same Council. During three years of World War II internships of nine months only were the rule and fulfilled this requirement. However, all internships completed on July 1, 1947, or thereafter must be of at least 12 months' duration.

4. A state license to practice medicine issued following examination, or by endorsement of the certificate of the National Board of Medical Examiners.

5. Citizenship in the United States or citizenship by birth in Canada or Cuba.

II. Special Requirements

The following minimum requirements have been established for admission to examination:

Formal training in dermatology and syphilology, after internship, of not less than three years (36 months). This training may be obtained as a resident, fellow, or graduate student in the institutions recognized by the Council on Medical Education and Hospitals of the American Medical Association and approved by the American Board of Dermatology and Syphilology. One month or less in each year may be taken as a vacation at the discretion of the chief of service. Vacations may not be postponed from one year to another; in other words, they are not cumulative. Candidates will not be eligible until three full years have elapsed since the beginning of training. This training shall include:

1. At least 12 months (less one month for vacation) full-time in an institution approved for three year training.

2. Graduate training in the basic medical sciences necessary for the proper understanding and treatment of the diseases involved in this specialty. Instruction in the following subjects as related to the skin is deemed advisable: embryology, histology, chemistry, physiology, bacteriology, mycology, parasitology, pathology, immunology, serology, pharmacology and materia medica, and the physics of physical therapy. These subjects should be incorporated in the curricula of institutions approved for three years.

3. Carefully supervised clinical and laboratory work.

4. Annual examinations or other appraisal by the chief of service in the clinical, laboratory, and public health aspects of dermatology and syphilology.

METHODS OF TRAINING

The preferred method of training is a three year course in an institution approved for that period. However, apart from the required full-time year in such an institution, the remaining two years may be taken in institutions of lesser approval; or in part or in whole as a preceptorship (q.v.); or in half-time institutional training, the remainder being spent in practice. In the last-mentioned plan, only the institutional work is credited as training. Training must be completed within a span of five years, except where military service or other compelling circumstances shall intervene.

CREDIT FOR MILITARY SERVICE

Students in training who have served as physicians in the Army, Navy, or U. S. Public Health Service may submit a supplementary application, obtainable from the Executive Secretary, for possible credit towards experience. This application is not obligatory, but if submitted it must be done prior to or at the time of filing application for examination. It will not be considered until the preliminary registration has been filed. Since the application must be circulated through a committee whose members may be widely separated, several months are often required for a decision.

Full-time dermatological military service may be credited in some part toward training, at the discretion of the board, provided it was under the direct supervision of a recognized specialist, and provided a significant portion of approved training was completed before the service concerned.

The board strongly urges that the candidate supplement his military service by further approved dermatological training before examination. Medical service in the armed forces not credited as training may be credited in part toward the two years of additional dermatological experience required for certification, the amount of credit depending on the circumstances.

PRECEPTORSHIP TRAINING

Candidates may take up to two years of their training under the direction of a preceptor approved by the board. Not more than half of each training day may be spent in the office of the preceptor; during the other half day supervised training must be undertaken in an approved institution. The preceptor and the chief of service of the institution are jointly responsible for this training, which must conform to a schedule that the preceptor has filed with the board. Preceptorships may be taken during any two of the years of training. A list of approved preceptors is available from the executive secretary. The status of a preceptee is not to be confused with that of an associate.

PRECEPTORS

A preceptor is one who takes a candidate into his office for part-time training. A dermatologist who wishes this responsible designation must be: (1) a diplomate of the board of at least five years' standing; (2) a recognized teacher of professorial rank on the dermatological staff of an institution approved for three years of training by the board; and (3) recommended as suitable by the chief of staff of that institution. He must be willing to submit regular reports on the student's training on forms supplied by the board.

Application is made to the board on forms obtainable from the executive secretary. On these the physical equipment and other facilities of the office are detailed, and the proposed plan of instruction is outlined, including the required institutional training. The application will then be appraised by the education committee, and acted upon at the next meeting of the board.

RESPONSIBILITY

It is the candidate's responsibility to make early contact with the board, to ascertain and observe its regulations, and to file the preliminary registration and the application for a certificate. Directors of training are responsible for submitting regular annual reports on their trainees to the board.

PRELIMINARY REGISTRATION

Every candidate must file a preliminary registration with the board prior to or at the beginning of training, whether or not plans are complete at the time. This establishes his identity and status as a candidate, and begins his permanent file. It enables the board to detect any deficiencies in basic qualifications or in the contemplated plan of training, in which case the candidate is immediately notified. The registration form is obtainable from the office of the board. No fee is involved at this time.

Each prospective candidate should also request and retain a copy of the "Booklet of Information," with whose contents he is expected to make himself familiar.

ESTIMATES OF STATUS

Many candidates write outlining their background to date and asking for an estimate of the further training needed. The board's requirements are published to provide this information, and any candidate should be able to judge his eligibility after studying them. Decisions as to additional training required can be made only by the Committee on Requirements upon submission of the application for examination giving details of the training undertaken. The $25 registration fee must accompany this application.

The board acts as a body, or through duly constituted committees. No individual officer or member is empowered to make decisions and personal interviews with them should not be requested.

CHANGE IN INSTITUTIONAL STATUS

When the term of approval of an institution changes, a candidate is given credit by the board for the training year already in progress, on the prior basis. Further work will be credited according to the new status.

APPLICATION FOR EXAMINATION

Application for examination may be filed before the end of training, and must be made before the closing date regularly published in the Examinations and Licensure column of The Journal of the American Medical Association. Dates of examinations, which may vary, are also published here. Applications should be filed early in order to obtain full advantage of the loan sets of histopathology slides available from the Armed Forces Institute of Pathology. Forms are obtainable from the executive secretary. No application will be considered without the accompanying registration fee of $25, which will not be refunded under any circumstances. When all supporting documents have been received the application is submitted to the Committee on Requirements, which appraises the qualifications of the candidate and decides as to his eligibility for examination. An examination fee of $75 is payable when the candidate is notified that his application is acceptable to the board. The total fee of $100 has been carefully computed and is used entirely for administrative purposes. Members of the board receive no compensation except for actual expenses connected with the examinations.

EXAMINATIONS

Examinations are designed to ascertain the breadth of the candidate's knowledge in the basic as well as the clinical aspects of dermatology and syphilology, to test his familiarity with the recent literature, and to gauge his general qualifications as a specialist in this branch of medicine. All applicants for certification must now take and pass a comprehensive written examination before they are eligible for the oral test, in whole or in part. The written examination is held simultaneously in various parts of the country on published dates. Applicants are then required to pass the oral clinical and laboratory examination which is conducted in a clinic or hospital. Cases will be seen and discussed with each candidate, and the examiners will seek to ascertain his knowlege of general dermatology and syphilology, as well as of various related subjects such as internal medicine, histopathology, mycology and microbiology, allergy, and the techniques and physics of radiology and other physical therapy.

Candidates whose applications have been accepted may take the next examination after the completion of training provided the quota is not already filled. Except in special circumstances, an applicant shall take the examination within a year following the filing of application. A candidate once accepted for an examination will henceforth remain eligible for only two succeeding examinations, unless some compelling circumstance, such as military service, shall intervene. Candidates who have signified their intention of taking the examination and who fail to appear, or who cancel their request after the final notice has gone out, shall forfeit the examination fee. The board's records are confidential throughout. Examination marks will not be divulged to the candidate or to anyone else. The findings of the board are subject to its discretion and are final. Applications are accepted only on this understanding.

REEXAMINATIONS

A candidate who fails or is conditioned will be eligible for a second examination without further formal application, but must give at least 60 days' notice of his wish. His acceptance will depend on the number of candidates already on the list. As the cost of examination is approximately the same whether in whole or in part, a reexamination fee of $50 will be charged. If a candidate fails to complete successfully all or part of the examination on two occasions, he must take at least six months' additional full-time training, or a year's half-time training, in an institution approved for three years, before being eligible for further examination. He must then file a new application and pay the initial examination fee of $75. If a candidate who has failed or been conditioned does not appear for reexamination before the expiration of three years, he must make a new application and pay an additional fee of $75 before he can be reexamined.

CERTIFICATES

A certificate granted by this board does not of itself confer or purport to confer any degree or legal qualifications, privileges, or license to practice dermatology or syphilology. The board does not intend to limit or interfere with the professional activity of any duly licensed physician. The granting of its certificate indicates that the holder has had adequate training in dermatology and syphilology and has voluntarily fulfilled the requirements of the board.

A certificate will not be issued until the successful candidate has completed at least five years of dermatological training and experience. Certificates will be issued only to members of the American Medical Association, or to members of parallel societies recognized as having the same purpose. A candidate does not become a diplomate until this requirement has been fulfilled. Certificates will be issued only to physicians who practice in the United States and its possessions, in Canada, or in Cuba. A diplomate is required to confine his practice to dermatology and syphilology except for such emergency programs as have been approved in principle by the American Medical Association. The names of all diplomates are supplied promptly to the Directory of Medical Specialists, and to other appropriate organizations and publications.

ADVERTISING

It is not considered good form for a diplomate to advertise to the lay public the board's recognition of his training and ability. He should not use commercial methods and avenues. It is proper to include a statement or phrase such as "Diplomate of the American Board of Dermatology and Syphilology" in announcement cards when opening an office, or after the author's name in a medical publication when the association with a hospital, medical school, or medical society is also mentioned. If the diplomate is in doubt, it would be well to consult the board before placing his good name in jeopardy.

PUBLICATIONS OF THE BOARD

1. Booklet of Information. Every candidate should request a copy, as he will be held responsible for knowing its contents.

2. Syllabus of Graduate Training. This is designed (*a*) to inform the candidate of the field to be covered in his preparation; (*b*) to aid medical schools and hospitals by outlining the scope of teaching deemed advisable.

3. Booklet of Opportunities for Prospective Graduate Students, containing details of the training programs in approved institutions. (Latest edition 1948) $1.

4. Booklet of Questions from the Written Examinations. $1.

AMERICAN BOARD OF INTERNAL MEDICINE

Walter L. Palmer, Chairman, Chicago.
Henry M. Thomas Jr., Vice-Chairman, Baltimore.
Hugh R. Butt, Rochester, Minn.
Thomas M. Durant, Philadelphia.
Ray F. Farquharson, Toronto, Ont., Can.
Thomas Findley, New Orleans.
Claude E. Forkner, New York.
John S. Lawrence, Los Angeles.
Howard P. Lewis, Portland, Ore.
John Minor, Washington, D. C.
Albert M. Snell, Palo Alto, Calif.
Chester M. Jones, Secretary-Treasurer, Boston.
Victor W. Logan, Librarian, Rochester, N. Y.
William A. Werrell, Executive Secretary-Treasurer, One West Main Street, Madison 3, Wis.

FORMER MEMBERS

*Reginald Fitz
Jonathan C. Meakins
*G. Gill Richards
Ernest E. Irons
William S. Middleton
O. H. Perry Pepper
David P. Barr
Walter L. Bierring
*John H. Musser
Marion A. Blankenhorn
LeRoy H. Briggs
Roy W. Scott
Virgil P. Sydenstricker
William B. Porter
William J. Kerr
William S. McCann
James J. Waring
*Frederick Hanes
Cecil J. Watson
Burrill O. Raulston
Truman G. Schnabel
Hugh J. Morgan
Alex M. Burgess
Louis Hamman

---

* Deceased

SUBSPECIALTY BOARDS

Allergy
  Walter S. Burrage
  Vincent J. Derbes
  Samuel M. Feinberg
  Francis C. Lowell
  Theodore L. Squier

Cardiovascular Disease
  Paul S. Barker
  Francis L. Chamberlain
  Charles E. Kossmann
  Hugh Montgomery
  Howard Wakefield
  Robert W. Wilkins
  Willard R. Wirth

Gastroenterology
  Abraham H. Aaron
  Leon Schiff
  Lowell B. Snorf
  Clarence J. Tidmarsh
  Henry J. Tumen

Pulmonary Diseases
  Roger S. Mitchell Jr.
  William H. Oatway Jr.
  Edward S. Ray
  John H. Skavlem
  David T. Smith

RESPONSIBILITIES OF THE BOARD

The major object of the board is to pass judgment on th competence of internists who desire certification—not to de termine who shall or shall not practice internal medicine as specialty.

The American Board of Internal Medicine is not concerne with any mechanism which gains special privileges or specifi recognition for those physicians who have been certified i internal medicine. It has never been the intent of the board t define requirements for membership on the staffs of hospital

The board endorses completely the stand of the America Board of Surgery, which "specifically disclaims interest in c recognition of differential emoluments that may be based o certification."

REQUIREMENTS FOR ADMISSION TO EXAMINATION AND CERTIFICATION

Each applicant for certification by this board must satisfy th qualifications listed below: (I) General Qualifications A, B, C, I (II) Professional Qualifications A, B, C, D. For exceptions t the requirements C and D under Professional Qualification se paragraph G.

I. General Qualifications

A. All candidates must be citizens of the United States o Canada.

B. All candidates must present evidence of satisfactory mora and ethical standing in the medical profession.

C. All candidates must be active members in good standin in their county and state medical societies in their state of lega residence. Under unusual and exceptional circumstances th board reserves the privilege of modifying this requirement. (Th ruling shall not apply to commissioned officers of the Unite States regular Army, or Air Force, or Navy, or United State Public Health Service or to full-time staff members [physician of the Veterans Administration who are otherwise Servic Fellows of the American Medical Association.)

D. Canadian citizens must be active members of the Canadia *Medical Association before admission to examination.*

II. Professional Qualifications

A. Graduation from a *medical school approved by the Counci* on Medical Education and Hospitals of the American Medica *Association at the date of graduation.*

B. *Satisfactory completion of an approved internship of no* less than twelve months.[1]

C. Residency or fellowship approved by the Council o Medical Education and Hospitals of the American Medica Association in internal medicine according to the followin plan (Plan A) or one of the alternate plans described unde paragraph D.

Plan A: A residency or fellowship in internal medicine fo a period of not less than three years in a hospital or other in stitution approved by the Council on Medical Education an Hospitals of the American Medical Association for residenc or fellowship in internal medicine. In such instances in whic a resident's nominal status differs *from that of the other hospita* residents, he must furnish the board with certification by th chief of the medical service and the medical director of th hospital that he actually performed the full duties of a residen as a bona fide member of the residency program. In addition, tw years of practice of *clinical internal* medicine will be required The board will accept the following equivalents as satisfyin one year only of the three years of residency or fellowship t which this paragraph refers. (Two years *must be in the field of* general internal medicine.)

1. If twelve months of a two year approved *internship* in a hospital approved for residency training in internal medicine is limited to the medical service and medical specialties, credit will be granted for a first year of assistant residency. The remaining two years of residency training must be in the general field of internal medicine. Certification by the chief of the medical service as to compliance with this requirement must accompan application.

---

[1] During the period in which the 9-9-9 program was in effect a approved internship of nine months will satisfy the requirement of twelve months. A residency of nine months is considered as nine months only.

2. One year of approved residency in one of the medical specialties: allergy, cardiovascular disease, gastroenterology, hematology, pulmonary diseases, neurology, pediatrics, psychiatry, dermatology and syphilology.

3. One year of approved residency in pathology.

4. One year as a graduate student or as an instructor in an approved medical school on a full time basis in bacteriology, biochemistry, pathology, pharmacology, physiology or internal medicine.

5. An advanced degree in the medical sciences, provided the work has been done and degree obtained after graduation from medical school.

NOTE.—Graduate training credit for the time involved will be allowed candidates who take and satisfactorily complete postgraduate courses in internal medicine or the basic medical sciences provided by accredited medical schools on a full time basis. This ruling shall not apply to courses of less than three months' or more than twelve months' duration. A certificate of creditable performance, based in part, at least, on a formal examination on completion of the course, will be required.

NOTE.—Fellowship or research assignments not approved by the Council on Medical Education and Hospitals will require certification by the chief of service that such assignment was equivalent in graduate training opportunities and patient responsibilities to that of an approved residency in internal medicine or the subspecialties recognized by the board. This certification must be presented before application is filed.

D. Alternate Training Plans: The board firmly believes that the plan of intensive training prescribed above offers the best opportunity for a young physician to prepare himself to meet his responsibilities as a specialist in internal medicine. It is recognized, however, that capable persons may accomplish the same result in a longer period of time during which the training is less intensive. The board realizes that a number of medical graduates cannot follow the shorter and more desirable plan either because suitable residencies are not available or, in some instances, because of personal and economic reasons. Accordingly, the board has modified its previous regulations governing eligibility for admission to examination. In doing so the board has not modified its standards of examination. It has liberalized its eligibility requirements for admission to examination by accepting half time formal training and the practice of internal medicine under favorable circumstances as to professional and hospital contacts, in lieu of part of the full time requirements. It is hoped that by this means exceptional individuals may acquire a knowledge of medicine and experience in its application sufficient to qualify for examination.

The program previously described (Plan A), which consists of three years of formal training in an approved residency or its equivalent, following internship, and two additional years in the practice of internal medicine, is recommended by the board. Variations in this program are now subject to the following regulations.

1. In all instances, one year of approved internship and one year of approved residency will be required, except as indicated under Plan G. The graduate training credit of one year heretofore granted as a result of active duty as a commissioned officer in the armed forces during the period beginning Dec. 7, 1941, and ending Jan. 1, 1947, and during the Korean emergency with effective date June 1, 1950, may not be applied in satisfaction of the one year of approved residency referred to in Plan D, E, or F unless the candidate's assignment is considered by the board to have been equivalent to an approved residency.

2. Following one year of internship and two years of approved residency,[2] the remaining requirements may be satisfied by:

Plan B; that is, by two years of half time formal training followed by two years of practice limited to internal medicine, or by

Plan C; that is, by five years of practice limited to internal medicine.

3. Following one year internship and one year of approved residency, the remaining requirements may be satisfied by:

Plan D[3]; that is, by four years of half time formal training followed by two years of practice limited to internal medicine; or by:

Plan E[3]; that is, by two years of half-time formal training followed by five years of practice limited to internal medicine, or by:

Plan F; that is, by eight years of practice limited to internal medicine.

4. In every instance at least two years of practice in internal medicine must be included, but in instances in which four years of practice are substituted for one year of residency, only one additional year of practice will be required; when more than eight years of practice are substituted for two years of residency an additional year of practice will not be required.

5. Physicians who have practiced internal medicine for twelve years following an approved internship may qualify for the examinations without further training (Plan G).

Half-time formal training under expanded plans B, D and E is defined as follows:

1. Half-time[3] as an instructor in clinical medicine in a recognized medical school in the United States or Canada.
2. Half-time[3] in a research fellowship sponsored by a recognized medical school in the United States or Canada.
3. Half-time[3] as a graduate student in an approved graduate medical school in the United States or Canada.

E. Practice Requirements: A period of not less than two years of practice to be completed by the time of first written examination in the general field of clinical internal medicine or in the more specialized branches of medicine. (See exceptions, Section D, paragraph 4.) This requirement may be satisfied by independent practice or in association with a recognized internist, following completion of requirements of formal training.

F. Graduates of Foreign Medical Schools: All candidates who are graduates of foreign medical schools must meet the following requirements as a minimum:

1. The physician must be a citizen of the United States.
2. The physician must furnish proof in the form, and to the extent deemed adequate by the board that he (or she) has graduated from a medical school after completing a four year full time course in medicine.
3. The physician must have a license to practice in one or more states of the United States, and have been in active practice confined to internal medicine within the state of legal residence for at least two years.
4. The physician must be an active member of the county and state medical societies in which he (or she) has established legal residence.
5. Graduates of foreign medical schools prior to 1930 may qualify under the alternate plans of the board the same as graduates of approved medical schools in the United States.
6. Graduates of foreign schools in 1930 and thereafter must, in addition to all other requirements, satisfy the requirements of one year of approved internship, and three years of approved residency or fellowship in the United States, and at least two years of practice limited to the field of internal medicine in the United States. If, however, their school of graduation is "recognized" by the Council on Medical Education and Hospitals of the American Medical Association, graduates of foreign schools may qualify under the various plans of the board the same as graduates of approved medical schools in the United States.

G. Candidates Graduating Prior to 1937: The requirement of three years of graduate training will not apply to candidates graduating from approved medical schools in the United States and Canada in 1936 or previous thereto, provided such candidates have limited their work to the field of internal medicine for at least two years and provided each candidate is recognized as an internist by his colleagues in his community.

---

[2] For the second year of approved residency one of the equivalents described under C-Professional Qualifications may be substituted.

[3] Half-time formal training is regarded as four hours per day for six days per week. It is required that half time formal training be verified by the head of the department. Verification must accompany application.

H. "Preceptor Training": Preceptor-type training is not recognized in satisfaction of any part of the three year requirement of formal graduate training.

I. Credit for service in the armed forces may be applied as follows:

1. Active duty prior to Jan. 1, 1947, may be applied for not more than one year as residency or practice credit, regardless of assignment. Service beyond one year may only be applied as practice credit on certification of former chiefs of service that assignments were in the field of internal medicine on a full-time basis in the care of clinical patients, largely on one's own responsibility.
2. Active duty from Jan. 1, 1947, to June 1, 1950, may only be applied as practice on the certification of former chiefs of service as referred to in paragraph 1, unless the candidate served officially as a resident in a service approved for residency in internal medicine while there.
3. Active duty subsequent to June 1, 1950, may be applied for not more than one year of residency or practice credit, regardless of assignment. Service beyond one year may only be applied as practice credit on the certification of former chiefs of service as referred to in paragraph 1, unless the candidate served officially as a resident in a service approved for residency in internal medicine while there. Residency credit automatically granted for active service in armed forces is discontinued as of July 1, 1954.

J. Graduates of the Chicago Medical School prior to approval by the Council on Medical Education and Hospitals of the American Medical Association and graduates of the Middlesex School of Medicine who received their degree in medicine prior to Jan. 1, 1951, and who have fulfilled all of the requirements set forth in *Section 2*, (Requirements for Admission to Examination and Certification), and an approved residency or fellowship of three years' duration (Plan A) and two years of practice in internal medicine may apply, and at the discretion of the Executive Committee or of the board be admitted to examination.

PRINCIPLES OF TRAINING

The American Board of Internal Medicine is interested in the fact that the candidate has embarked on a career of study voluntarily and has thereby expressed the desire to excel and to participate personally in the world's progress in medicine.

Preparation must be based on years of continuous thoughtful study. Therefore, in suggesting a program for those who wish advice, the board hopes to assist the candidates to avoid inferior and superficial programs which may lead to failure and disappointment in later years.

The board believes that all internists should have a sound fundamental knowledge of anatomy, bacteriology, biochemistry, pathology, pharmacology and physiology. Such knowledge is essential to the continued progress of any internist. The board anticipates that adequate training will be obtained in the basic sciences as applied to internal medicine during a formal three year residency program.

The board wishes to emphasize that time and training are but a means to the end of acquiring a broad knowledge of internal medicine which the candidate must demonstrate to the board in order to justify it in certifying that he is competent to practice internal medicine as a specialty. The responsibility of acquiring the knowledge rests with the candidate. The responsibility of maintaining the standards of knowledge required for certification rests with the board.

APPLICATION

Candidates for examination must make their application on a prescribed form, which may be obtained from the office of the Executive Secretary-Treasurer.

The application must contain a record of the candidate's premedical and medical training as well as of internships, residencies, graduate study, hospital or dispensary staff appointments, teaching positions, service in the armed forces, membership in medical societies, medical papers published and the names of four well-known internists to whom the board may write for professional and character reference.

The application must be accompanied by one recent, signed photograph of the candidate mounted on the application, and the registration and examination fee of $40 to cover the written examination, of which $25 will be refunded if the application is disapproved. Upon application for admission to the oral examination, an additional fee of $50 will be required. Upon notification of certification by the board, a further fee of $10 to cover cost of certification, will be required.

The requirements of graduate training and two years of practice in the field of internal medicine must be satisfied before a candidate is eligible to apply for admission.

METHOD OF EXAMINATION—WRITTEN AND ORAL

The examinations for certification by the board comprise two parts: Part I is written; Part II is clinical and is an oral examination. The written examination is held simultaneously in different sections of the United States and Canada. Effective Jan. 1, 1949, one written examination will be given each year. This examination will be held on the third Monday in October. This examination is divided into a morning and afternoon period for each of which three hours are allowed. The questions are of the multiple choice type, framed in such a manner as the board elects and designed to test the applicant's knowledge of applied physiology, anatomy, physiological chemistry, pathology, bacteriology and pharmacology as related to internal medicine, and his basic clinical acumen.

Candidates must pass the written examination before admission to the oral examination will be authorized. Oral examinations are held near the time and place of the annual meetings of the American Medical Association and the American College of Physicians and at such other times and places as are necessary. Announcements of all oral examinations will appear in the *Annals of Internal Medicine* and THE JOURNAL of the American Medical Association. Applications cannot be accepted until the schedule is announced in the publications referred to and cannot be accepted after the closing date as announced.

The oral examination will be conducted under the direct supervision of the board. It will be given by members of the Board of Internal Medicine with the assistance of such guest examiners as may be selected. Oral examinations are conducted at the bedside of each of two patients previously assigned to each candidate. Forty-five minutes will be allowed for the examination of each of the patients before the candidate is examined orally. Candidates will be expected to present in a concise, orderly fashion pertinent facts in the history and diagnosis. Demonstration of important physical findings will be requested by the examiner. During the oral examination questions will be asked concerning diagnostic and therapeutic procedures related to the problems under discussion and to any other aspects of internal medicine. Conciseness and clarity of statement as well as evidence of clinical maturity, will be searched for, in addition to factual knowledge. Furthermore, the candidate should be prepared to demonstrate his ability to interpret objective demonstrations of roentgenologic, pathological, hematological, electrocardiographic, and other abnormalities.

REEXAMINATION—WRITTEN AND ORAL

1. Restrictions on the number of written examinations for which a candidate may apply have been waived. The interval between all written examinations will be not less than one year; however, the executive committee of the board may, in its discretion, require a longer period, or may for reasons it considers adequate, deny admission to reexamination. A fee of $15 is required for each written reexamination. The fee is due upon application for reexamination.

2. Restrictions on the number of oral examinations for which a candidate may apply have been waived. The interval between all oral examinations will be not less than one year, however, the executive committee of the board may in its discretion require a longer period or may, for reasons it considers adequate, deny admission to reexaminations. A fee of $40 is required for each oral reexamination. The fee is due on application for reexamination.

3. This ruling does not make it mandatory for a candidate to repeat the examination within the specified time limit. Candidates may elect a longer interval in the case of both the written and oral examinations.

CANCELLATIONS

Effective July 1, 1949, any candidate who cancels his assignment for a written or an oral examination after Sept. 1 will be required to pay a special fee in the amount of $10 before a subsequent examination, unless his cancellation was due to a cause deemed adequate by the board to exempt him from such special fee. This provision becomes necessary because of the large number of cancellations after complete arrangements have been made, and the expense incident thereto.

CERTIFICATES

The certificate issued by the American Board of Internal Medicine shall be in such form as to comply with the articles of incorporation and the by-laws and shall be signed by the officers and members of the board and shall bear the official seal of the board.

Certificates of the board will be issued to candidates who have satisfactorily completed the written and oral examinations and have been found qualified by the board to practice the specialty of internal medicine. Specialty certification will be designated on the certificate, for those so certified.

SUBSPECIALTY BOARDS

Allergy, cardiovascular disease, gastroenterology, and pulmonary diseases are recognized specialties.

Each subspecialty application is individually considered and acted on by the subspecialty board concerned. The candidate is not eligible for examination until his application has been approved by the subspecialty board concerned and confirmed by this board.

All candidates must pass the written and oral examinations in internal medicine before admission to examination in a specialty of medicine referred to. The specialty examinations are oral only and may be taken at a scheduled subspecialty examination subsequent to the candidate's certification in internal medicine. Announcement of the subspecialty examinations will appear in THE JOURNAL of the American Medical Association and the *Annals of Internal Medicine.*

Application forms will be forwarded on request to the office of the Executive Secretary-Treasurer and should be returned to his office when completed.

INFORMATION ON CERTIFICATION IN ALLERY BY THE AMERICAN BOARD OF INTERNAL MEDICINE

1. Two years, full time, including training both in allergy and internal medicine in an approved allergy clinic and hospital; or

2. One year, full time, including training in allergy and internal medicine in an approved allergy clinic and hospital, and two additional years of attendance and participation at least two half days weekly at an approved allergy clinic; or

3. Five years of attendance and participation at least two half days weekly at an approved allergy clinic; or

4. Twelve years in the practice of allergy after fulfilling the professional qualifications for certification in internal medicine, with evidence of sustained scientific interest.

5. All candidates who desire consideration in allergy must be certified in internal medicine before applying for admission to examination in allergy.

The candidate should be prepared for oral and clinical examination in the anatomy, pathology, physiology, and biochemistry of reactions of hypersensitivity. This will include immunology, immunochemistry, atopy, allergy of infection, collagen disease, and experimental hypersensitivity. He should be proficient in clinical diagnosis, laboratory procedures, and in the treatment of allergic diseases. He should be familiar with the physiology of respiration, especially as modified by bronchial asthma and pulmonary emphysema and with the pharmacology of drugs used.

NOTE.—Fellowship or research assignments not approved by the Council on Medical Education and Hospitals will require certification by the chief of service that such assignment was equivalent in graduate training opportunities and patient responsibilities to that of an approved residency in allergy recognized by the board. This certification must be presented before the application is filed.

RECOMMENDATIONS OF THE SUBSPECIALTY BOARD ON CARDIOVASCULAR DISEASE CONCERNING QUALIFICATIONS OF CANDIDATES FOR CERTIFICATION IN THIS SUBSPECIALTY

The applicant should be of good character and excellent standing in his community, as attested by letters from sponsors of known integrity.

The applicant should have reached a state of maturity, compatible with the acquisition of sufficient factual knowledge and experience to form a basis for sound judgment. The board believes that only exceptional persons are sufficiently mature for this subspecialty before the age of thirty-five years or less than ten years after graduation from medical school.

The board will make exception to this general rule of admission to examination, under unusual circumstances, largely to avoid injustice to the younger men of outstanding ability.

The candidate must have given clear evidence of his deep and constant interest in cardiovascular disease over a period of years. The board is particularly interested in recommending for examination those applicants whose records indicate that their interest in cardiovascular disease will probably be sustained throughout life, and that their knowledge of the subject will constantly grow. Achievements in the field of research are regarded as evidence of such interest, but publication of articles or prolonged training in research work is not considered essential. Consideration will be given to the circumstances of each applicant's training and experience; those who have been in communities and institutions which offered excellent opportunities for contributions to the knowledge of cardiovascular disease will be expected to have made such contributions. Consideration will be given to the difference in experience of those whose opportunities for research have been more limited.

In most cases, it is deemed essential that the candidate, after thorough training in internal medicine, shall have received at least one full year of postgraduate education in cardiovascular disease, preferably under the guidance of a person known to be experienced and sound. Qualifications will be appraised by the Cardiovascular Board and admission of the applicant to the examination will be determined by a majority opinion of the board.

Every candidate admitted to the certifying examination in cardiovascular disease will be expected to possess specialized knowledge of the kind indicated below. This list is by no means complete; it is intended to indicate the nature, rather than the extent, of the knowledge every applicant should have. In terms of its scope it should be regarded as the minimum, not the maximum. Persons possessing special knowledge and training in peripheral vascular disease may be expected to have a higher standard required in the examination in that portion of the field than in the certain details of other branches of cardiology, and the converse may be similarly applied.

1. Full and accurate knowledge of the anatomy of the normal and diseased heart, including its relationships to the external chest and to the other mediastinal structures. A comprehensive anatomical knowledge of all important blood vessels including their aberrant locations.

2. A thorough knowledge of the normal and pathological physiology of the heart and peripheral circulation.

3. Detailed knowledge of the diagnostic signs which permit the recognition of all important diseases of the heart and blood vessels, such as arteriosclerosis, arteriosclerotic heart disease, syphilitic heart disease, rheumatic heart disease, constrictive pericarditis, auricular and ventricular septal defects, coronary thrombosis with myocardial infarction, thromboangitis obliterans, Raynaud's syndrome, coarctation of the aorta, aneurysm, patent ductus arteriosus, periarteritis nodosa and lymphedema.

4. Familiarity with the special methods used in the study of diseases of the heart and blood vessels. In the case of the heart, these include such technics as electrocardiography, roentgenography, catheterization and angiocardiography; in the case of vascular disease, such technics as the use of the oscillometer and thermocouple, arteriography, and venography, reflex vasodilatation, the cold pressor test, color changes with elevation, dependency, temperature, etc.

5. Accurate knowledge of the pathologic changes associated with the more important diseases of the heart and blood vessels, sufficient to enable the candidate correctly to evaluate the pathologic condition from gross specimens or microscopic sections.

6. Fairly extensive and detailed knowledge of the pharmacology relating to heart and blood vessels. This must include full knowledge of the important relationship of the autonomic nervous system both to the heart and to the peripheral vessels, and the effects of stimulation or paralysis of the various parts of the autonomic system by drugs or by surgical methods. The candidate should be intimately familiar with the use and effects of such important drugs as digitalis, quinidine, heparin, papaverine, epinephrine, dicumarol, penicillin, diuretics, sedatives, etc.

7. A sound understanding of the indications for conservative therapy, as well as for surgical procedures, in cardiac and peripheral vascular diseases (patency of the ductus arteriosus, arteriovenous anastomoses, constrictive pericarditis, scalenus, anticus syndrome, etc.).

In summary, it is the desire of the American Board of Internal Medicine and its Subspecialty Board in Cardiovascular Disease that physicians shall not be admitted to the certifying examinations unless they have exceptional qualifications as individuals and as experts in this subspecialty of medicine.

INFORMATION ON CERTIFICATION IN GASTROENTEROLOGY BY THE AMERICAN BOARD OF INTERNAL MEDICINE

A. Professional Standing

The candidate must have at least two letters from recognized internists or gastroenterologists, which must attest to the candidate's professional qualifications and ethical standing, whether he is specializing in gastroenterology and if not entirely, giving an opinion as to approximately how much of his work is devoted to it.

B. Education

1. The candidate must admit proof of adequately supervised training in the recognized gastroenterologic procedures, including gastric and hepatobiliary function tests, proctosigmoidoscopy and gastrointestinal roentgenology (film interpretation).

2. The candidate must present evidence of fulfilment of one of the following requirements:

   (*a*) Formal graduate course in gastroenterology, full time for at least eight months in a recognized institution.

   (*b*) Residency or fellowship for at least one year in gastroenterology under tutelage of a recognized specialist.

   (*c*) In the absence of (*a*) and (*b*), attendance and active participation in a ward service or in a gastrointestinal clinic, recognized in standing, for at least five years.

3. If requirements (*a*) or (*b*) under the above heading have been met, only three years of (*c*) will be required.

C. Practice

At least 60 per cent of the candidate's work must have been devoted to gastroenterology for at least three years before application.

INFORMATION ON CERTIFICATION IN PULMONARY DISEASES BY THE AMERICAN BOARD OF INTERNAL MEDICINE

I. Candidates for certification in pulmonary diseases shall fulfil the requirements of the American Board of Internal Medicine as to:

A. General qualifications.

B. Professional education.

C. Special training.

II. In addition to the General Requirements of the American Board of Internal Medicine, candidates shall:

A. Have completed special training period in pulmonary diseases to include at least a year's work in a sanatorium or hospital for tuberculosis and at least another year in the practice of pulmonary diseases in such an institution or in association with an older man competent in this field.

B. Submit an application to the Advisory Board in this specialty, which must be approved by all of the members of this board.

C. Pass the written and oral examination of the American Board of Internal Medicine.

D. Pass the oral and practical examination in pulmonary diseases.

AMERICAN BOARD OF NEUROLOGICAL SURGERY

Francis C. Grant, Chairman, Philadelphia.
Howard A. Brown, San Francisco.
George Baker, Rochester, Minn.
Eldridge Campbell, Albany, N. Y.
William V. Cone, Montreal, Canada.
Franc Ingraham, Boston.
Edgar Kahn, Ann Arbor, Mich.
Kenneth G. McKenzie, Toronto, Canada.
A. Earl Walker, Baltimore.
James C. White, Boston.
Edgar Fincher, Emory University, Georgia.
Leonard T. Furlow, Secretary-Treasurer, Washington University Medical School, St. Louis.

General Qualifications

1. Moral and ethical standing in the profession satisfactory to the board of directors.

2. It shall be discretionary with the board to accept for examination candidates who have been in practice more than six years but whose formal training fails to meet the full requirements.

3. Properly qualified candidates who are permanent residents in and citizens of other countries and are legally qualified to practice medicine there, and who have received their training in neurological surgery in the United States of America or Canada may apply for certification by the American Board of Neurological Surgery.

4. A special certificate may be issued to foreign (not United States of America or Canadian citizens) candidates who have received their training in neurological surgery in the United States of America or Canada and who are returning to their own country at the end of their training period, upon passing successfully the regular examinations of this board, without completion of the requirement of two years in the practice of neurological surgery. This special certificate shall be appropriately identified to distinguish it from the regular certificate of this board.

Preliminary Professional Standing

1. Graduation from a medical school which is acceptable to the American Board of Neurological Surgery.

2. Completion of a surgical internship of not less than one year in a hospital acceptable to the board, or its equivalent in the opinion of the board. (A one year rotating internship does not satisfy this requirement.)

Special Training

A period of graduate study in a recognized graduate school of medicine of not less than three years beyond the year of general surgical training, or in an approved hospital or under a sponsorship acceptable to the American Board of Neurological Surgery for the training of neurological surgeons. The training in clinical neurological surgery must be progressive and not obtained during repeated short periods in a number of institutions. It is preferable that at least two years of this training be had in one institution, and the board will not ordinarily approve periods of training in clinical neurological surgery of less than one year.

This period of special training shall be of such a character that the relation of the basic sciences of anatomy, physiology, pathology, bacteriology, and biochemistry is emphasized. Knowledge of these sciences as applied to practice of neurological surgery will be required in the examination. The board will not credit periods of study limited to these basic sciences of longer than six months in fulfillment of this requirement of three years of special training.

Training in diagnostic neurology should be obtained either in correlation with training in neurological surgery or independently. The candidate will be required to pass an examination in this subject.

An additional period of not less than two years in the practice of neurological surgery.

The above represents only the minimum requirements of training for the practice of neurological surgery in the opinion of the board.

APPLICATIONS

An application on the official application blank in such form as may be adopted from time to time by the Board of Directors, in order to be considered at any meeting, must be in the hands of the secretary-treasurer of the board not less than sixty days before the date of such meeting.

The secretary-treasurer of the board on receipt of an application shall forthwith make inquiries from those to whom the candidate refers and from such other persons as the secretary-treasurer may deem desirable, after which he shall forward the application to the Committee on Credentials. This committee shall consider the application and other information available and notify the secretary-treasurer its recommendation whether or not the applicant is acceptable. The certification of a candidate shall be approved by a majority of the members of the entire board at any meeting held for such certification.

PAYMENT OF FEES

The fee for certification, with or without examination, shall be $100.

The candidate for examination on filing his application shall accompany it with an application fee of $25. When notified by the secretary-treasurer that he is eligible for examination he shall send the examination fee of $75 to the secretary-treasurer at least two weeks before the date of the examination.

REEXAMINATION

A candidate who has failed in one examination is eligible for reexamination in the subject, or subjects, in which he failed, within three years, on payment of a reexamination fee of $25. A candidate who has failed in one examination and who does not apply for reexamination within three years or a person who has applied within that time but who has failed a second time will be considered a new applicant.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

Walter T. Dannreuther, President, New York.
F. Bayard Carter, Vice-President, Durham, N. C.
Robert A. Kimbrough Jr., Vice-President, Philadelphia.
Willard R. Cooke, Galveston, Texas.
Daniel G. Morton, Los Angeles.
John L. Parks, Washington, D. C.
Herbert E. Schmitz, Chicago.
Robert L. Faulkner, Secretary-Treasurer, 2105 Adelbert Road, Cleveland 6.
Lawrence M. Randall, Assistant Secretary, Rochester, Minn.

REQUIREMENTS

Each applicant before he may become eligible to receive such certificate of the board or other evidence of recognition:

1. Must have had conferred on him a degree in medicine by an institution of learning approved by the Advisory Board for Medical Specialties and the Council on Medical Education and Hospitals of the American Medical Association.

2. Must establish in a manner satisfactory to the Board of Directors that he is a physician duly licensed to practice medicine, and

(*a*) that he is of high ethical and professional standing.

(*b*) that he has received at least minimal training bilaterally, i. e., in both obstetrics and gynecology. Training in one branch only is no longer sufficient for qualification. The term "minimal training" as used here is at present defined as meaning at least one year of full time formal training, in the branch of either obstetrics or gynecology relegated to a minor role in a candidate's training program as related to his preference and plans for practice. The required total of formal training is three years.

(*c*) that physicians otherwise qualified, who were graduated before Jan. 1, 1939 and whose required training was in obstetrics or gynecology alone, and who have confined their practice to obstetrics or gynecology for at least five years immediately prior to application be accepted for examination as candidates for certification in either obstetrics or gynecology. In all other respects requirements for eligibility remain the same as for those physicians graduated since 1939. Bilateral training is required as published in the bulletin of the board. At least a fundamental knowledge of both obstetrics and gynecology is essential regardless of whether a candidate's practice is limited to one or the other branch.

3. Must make application for investigation of his credentials and a survey of his character.

4. Must assure the board that he is limiting his practice to obstetrics and/or gynecology and that he intends to continue to do so, except for possible military duties. Candidates will be accepted only if, on application or by the time of their examination, they have been in practice limited to the specialty for a minimal period of two years following completion of their specialty training. This change in requirements permits a qualified candidate to make his application in the second year of his post-training practice period. The sole exception to the two year limitation is practice for the Frontier Nursing Service, Inc., of Kentucky.

This board will not accept applicants for examination who are not full citizens of the United States or of Canada, though they may be residents of either country. Foreign born applicants must have been certified by either the National Board of Medical Examiners or licensed to practice medicine in the United States or Canada by a state or provincial board of licensure. Notarized statements, *not* original citizenship papers, must be furnished when the application is filed attesting to the fact of full citizenship in the United States or Canada, if the applicant is foreign born. Further, there will be required a probationary period of at least three years from the date of licensure in the practice of medicine in these countries before such a candidate may be admitted to examination.

Applicants who have been certified by one of the other American specialty examining boards will not be eligible for certification by this board until they have relinquished the certificate previously conferred. (In making application to this board for certification, applicants, for some time back, have agreed to revocation of their certification by this board if and when they apply for and receive certification by any other American board, except on special action to the contrary taken by the American Board of Obstetrics and Gynecology.)

The board has ruled that physicians who accept male patients in their private or other practice, for operative or other care, cannot be regarded as specialists in obstetrics and gynecology, except by special ruling when this is related to active military duty.

This board deprecates engagement in fields of practice other than that in which candidates profess to be specialists. The board does not exclude from examination, however, obstetricians-gynecologists who practice abdominal surgery and urology in the female because of the correlation of these activities. The sole exception to this provision is that it is permissible for candidates of the American Board of Obstetrics and Gynecology to participate in emergency care plans operated under the auspices of district, county, or state medical societies.

Military service or any other similar patriotic service, such as work with Selective Service boards, etc., have not been construed as nonlimitation of practice in violation of the board regulations. Officers (Regular or Reserves) certified by this board and on duty with "Family Dependent Services" are expected to be permitted to limit their work to the specialty, as in civilian life, and not to be engaged regularly in general or other practice.

The minimal requirements for all candidates will be uniform as follows:

1. Completion of at least one year intern service in a hospital approved by the Council on Medical Education and Hospitals of the American Medical Association. This need not be a general rotating internship, although this latter is preferred.

The board accepts the fifth or "intern" medical school year required at some schools in lieu of the usual fifth or intern "clinical training" year following graduation.

2. A minimum of seven years of training and practice after the first intern year, to include at least three years of residency training in obstetrics-gynecology in approved institutions, or adequate preceptorship training. (See Section on Preceptorship Training.) Following completion of acceptable training two years of post-training practice limited to the specialty are required.

The Council on Medical Education and Hospitals of the American Medical Association listed for the first time in 1950 (*J. A. M. A.*, April 15, 1950, pages 1216, 1204-1211), 149 inspected and approved one year residencies in general surgery "as offering training in general surgery . . . in preparation for residencies in surgical specialties." Such residencies are recommended by this board as desirable additional preparation, particularly when they provide opportunities for training in abdominal surgery. (See Internship and Residency issues of THE JOURNAL for lists.) As noted above, such service may be included in the total minimal eight years required after graduation.

Post-training practice period may include full time medical school or other positions within the specialty, actual practice within the specialty as an assistant, associate, or independently.

Periods of residency in obstetrics-gynecology in excess of the equired three years will not be accepted as a substitute for any part of the two required years of post-training practice except in he cases of men advancing from their residency training into and planning to remain in full time teaching positions in medical schools and their affiliated hospitals.

3. Basic science training should emphasize the relation of the basic sciences, anatomy, pathology, physiology, biochemistry and bacteriology, to the application of surgical principles which are fundamental in all branches of surgery. More especially, for this specialty there should be training in infertility, endocrinology, oncology, irradiation therapy, electrotherapy, psychosomatic medicine and other nonoperative methods of diagnosis and treatment. In addition, the candidate must understand and be trained in the care of emergencies, shock, hemorrhage, blood replacement, electrolyte and fluid balance, protein and nitrogen balance, choice of anesthetics, chemotherapy, acidosis and alkalosis, narcotics and hypnotics, wound healing, and so on.

Studies in the basic sciences may be integrated with the clinical work or may be given separately.

SPECIAL CREDITS AND RULINGS

The board conformed with the general acceleration in programs in medical education in that it will accept a period of nine "accelerated" months as an academic year in satisfying the requirement for each of three years of residency training. Such allowances can be made only for services during the wartime period of the official "accelerated program" and are not made for services before 1943 or after the discontinuance of this acceleration in 1946.

No formal graduate courses are required. If taken, credit will be limited to six months. Fellowships will be evaluated individually for credits by the Credentials Committee.

An applicant serving under military orders in an Army or a Navy hospital in an obstetrical-gynecological service under supervision will be given the same credit as if he were working under a preceptor, if these departments are supervised by diplomates of this board or recognized obstetricians-gynecologists. He may obtain full residency credit if such hospital is officially approved and listed for residency training in this specialty. The Credentials Committee of the board will review and give consideration to each individual case. Special request must be made for such credits.

A blank log-book entitled "Medical Officers Professional Training Record" is obtainable from the offices of the Surgeons General. This Record should be carefully kept and attested while in military service.

APPLICATION AND FEES

Application must be made on a special blank which will be furnished by the secretary's office and must be forwarded with the other required credentials and the application fee to the secretary's office not later than Oct. 1, 1954.

Candidates currently applying for admission to the examinations for certification are required to submit with their application a plain typewritten list of all patients admitted to the hospitals where they practice, for the year preceding their application or the year prior to their request for reopening of their application, with the diagnosis, pathological diagnosis, nature of treatment, and end result.

Candidates who have not had a minimum of three years' formal residency type of special training should utilize Preceptorship or Supplemental Training forms, obtainable from the office of the board, to submit in addition to the regular application form.

The application fee is $25 and is not returnable.

The examination fee is $100 and is payable when the candidate is notified of acceptance for examination. This fee is not returnable after the candidate has been officially accepted by the Credentials Committee and notified to report for examination.

If the candidate fails the Part II examination on his original application, he may exercise the privilege of one reexamination (see Examinations, Part II) but he will be required to pay a fee of $25 for such reexamination on making request that his application be reopened for this purpose. This ruling is effective on applications originally made after June 1, 1949.

The fees have been carefully computed on a basis of cost of examinations and are used entirely for administrative expenses. Examiners and associate examiners serve as such without compensation other than actual expenses.

Many prospective candidates write the secretary's office outlining in their letters their training qualifications and asking informally if they are eligible, if this training has been sufficient and, if not, what is still lacking. Any candidate should be able to make a fair estimate of his eligibility after studying these requirements.

Individual officers and directors cannot and will not make any such estimates or rulings. These are made only by the Credentials Committee after reviewing such requests made on a special form provided for this purpose, and submitted to the secretary for an appraisal with the fee of $15 to cover clerical expenses involved. This form is designated the "Application for Appraisal of Incomplete Training."

Personal interviews cannot be granted by the secretary or other directors of the board unless requested by the board.

Appraisal of Incomplete Training forms should not be filed if Application for Certification has already been filed. This is unnecessary duplication.

All candidates must comply with the board regulations in effect for the year in which the examination is taken, regardless of when the original application was filed.

Applicants declared ineligible for admission to examination may request reopening of their applications within two years of the filing date without payment of an additional application fee. When a candidate requests that his application be reopened, he must supply the board with information to justify such further consideration. A request for the reopening of an application declared ineligible by reason of insufficient training, nonlimitation of practice or similar items may not be approved in less than two years, although application may be made as specified above to avoid payment of an additional fee. This approval time may be reduced under exceptional circumstances. The request must have adequate supporting evidence of additional training and experience to warrant reconsideration. Preceptorship or Supplemental Training blanks should be used for such reports, and these will be supplied on request.

After two ineligiblity or postponement rulings on any candidate's application, an entirely new application must be submitted (with or without fee, according to current requirements) in order to bring data down to date. The essential feature of this should be evidence of additional training and experience.

Applicants declared eligible but who fail to exercise the examination privilege within three years of the date of filing the application are required to file a new and current application and to pay a new application fee.

Candidates should offer as sponsors or references two diplomates of this board with whom they are presently in contact, rather than men under whom they served as residents only. It is required that sponsors be from the candidate's community and currently acquainted with the candidate and his ability in his practice of the specialty.

On notice of acceptance for admission to examination, examination fee is due and also case records which should be shipped by the candidate to the secretary's office as soon as possible and not later than the date of the Part I written examination.

The candidate should make immediate acknowledgment of his notice of acceptance, at which time he will notify the secretary's office approximately when to expect his case reports.

EXAMINATIONS

Part I examinations are scheduled annually for early in February. Grades cannot usually be mailed from the secretary's office until after April 1 following the examination. Arrangements will be made for candidates to report in any convenient city where there may be a diplomate of this board to conduct or supervise the written examination, which will be sent out from the board's office under sealed cover.

Special arrangement will be made through senior officers for conducting the written portion of the Part I examination for men in military service. Such candidates are requested to keep the secretary's office informed at all times of changes in their mailing addresses.

All applicants accepted for examination will be required to obtain a passing grade in both the written examination and a review of case reports (Part I), before becoming eligible for the oral-clinical and pathology examinations (Part II). The passing grade for the written examination and case reports is 75 per cent. A candidate whose grade in either or both falls below 75 per cent is conditioned.

Reexamination for the removal of conditions in Part I may be taken after one year but within three years after the first failure, without payment of an additional fee.

Application for reexamination in Part I must be made by the candidate prior to Nov. 1 of any year.

Requests for reexamination in the written portion of Part I and requests for resubmission of case reports must be filed prior to Oct. 1, 1954.

Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held later in the year.

Requests for reexamination in Part II must be made prior to Feb. 1, 1955.

Candidates appearing for reexamination under a new application after two previous failures will not be required, if they have passed all or part of the Part I examinations on their first application, to repeat such examination items already successfully cleared.

PART I

Examination consists of:

1. A comprehensive written examination, conducted annually, including questions on both obstetrics and gynecology and related basic sciences. The written examination will be limited to a maximum period of three hours.

2. The filing, as early as possible, and not later than the date of the written examination, of 20 obstetrical and gynecological case reports, in condensed form. (See Sections on Case Reports.)

Results on case reports submitted for review prior to the written examination will be announced simultaneously with those of the latter; candidates who take the written examination but fail to submit case reports on or before the date of the written examination cannot be given the grade on the latter until their case reports have been received and graded.

PART II

The oral-clinical and pathology examinations given all candidates are conducted by the entire board and the associate examiners usually near the time and place of the annual meeting of one or more of the national societies represented on this board. Advance announcements of examination dates and place will be made in medical journals throughout the country. (Schedule for Chicago, May 12 to 20, 1955.)

Examination consists of:

1. Oral examination before two to four examiners.

An endeavor is made to adapt the details of the oral examination to each candidate's experience and practice. The examination is particularly directed to ascertain his familiarity with recent obstetrical and gynecological literature, the related basic sciences, the breadth of his clinical experience, and his general qualifications as a specialist in obstetrics and gynecology.

2. Pathology examination.

The candidate is expected to identify and to discuss several obstetrical and gynecological pathologic specimens and sections.

Examiners report orally on each candidate to the assembled board, after which the results of their investigations are considered jointly by the entire board and associate examiners. After a general consideration of the details of the candidate's oral and pathology examinations, including a review of his capability and general adaptability, the candidate is passed or failed by the entire board of directors.

The final action of the board is based on the candidate's ethical and professional record, training and attainments, as well as on the results of his formal examination.

When a candidate fails in Part II of the examination, he is not required to repeat Part I but is required to repeat Part II only. One reexamination may be taken within three years of the original examination and first failure without formal reapplication papers. Request for reopening of the candidate's original application must be filed with a reexamination fee of $25 (See Application and Fees). Application for reexamination in Part II must be made by the candidate prior to Feb. 1 of any year. Data regarding additional training or experience and medical school or hospital appointments acquired in the interim must be cited in the letter and verified on a Supplemental Training Form obtained from the office of the secretary of the board.

The reexamination fee will be effective only on original applications filed subsequent to the date of this announcement, namely, June 1, 1949.

The candidate may be allowed to reappear at the examination following the one failed by him. The board may, at its discretion, deny the candidate the privilege of reexamination. Requests for admission to reexamination must be accompanied by statements covering additional training, or opportunities for supervised clinical experience since the previous failure to justify such readmission.

Failure to exercise the privilege of reexamination within three years entails the filing of a new application with the usual application and examination fees.

After two failures in either Part I or Part II on the first application, the candidate may reapply with a new application and reapplication fee of $25 and reexamination fee of $100 and be readmitted to examinations once only. Exceptions to this ruling can be made only by action of the entire board of directors in annual session, usually to be based on evidence of additional training and experience sufficient to warrant such action.

CASE REPORTS

Case reports are to be sent by the candidate to the secretary as soon as possible after receiving notification of eligibility, and not later than the date of the Part I written examination.

In the case of candidates applying for unilateral certification, case reports must pertain to the branch for which application is made.

Twenty important obstetrical and gynecological case reports, in condensed form, are required. Five cases may concern major illnesses, not necessarily operative. These reports must include a variety of material rather than a number of reports of one type. Case reports from one residency's service shall not be more than five in number.

Men holding full time medical school faculty appointments may submit half their case records from this full time, nonprivate practice, but post-training service. (See Requirements.)

The candidate should prepare and maintain in his possession a carbon copy of his case records in case of possible loss in shipping.

These reports are not to be copies verbatim from hospital records, but should be in condensed form.

Evidence of adequate follow-up examination pertinent to each individual case must be submitted.

The candidate should submit *separate verified index lists, in duplicate* for each individual hospital at which operations were performed. All of these must be formally signed by the responsible hospital official (preferably the hospital superintendent), attesting in each instance that the candidate was the operator.

In the upper left-hand corner of each index sheet there should appear:

Candidate's Name; and Name and Address of Hospital.

The data for each patient should be tabulated horizontally, reading thus:

1. Sequence number of case report (1 to 20).
2. Whether patient was from the candidate's residency service or his own private or ward practice, as follows: "Res. Serv." or "Own Practice." *All records failing to have this information will not be considered acceptable.*
3. Patient's name or identifying initials, age, parity.
4. Date of patient's admission and hospital admission number.
5. Date of patient's operation.
6. Date of patient's discharge.
7. Dates of follow-up examinations.

At the foot of each index sheet should be placed the attested tatement of the hospital official, referred to above. This statenent should read as follows:

This is to certify that the above listed case reports have been erified by me from the records of this Hospital and these paients operated upon in this institution by Dr.————————; hat the admission number and dates specified are correct. This s further to certify that the reports given the following sequence umbers (———— to ———— inclusive) were from the esidency service of the aforementioned physicians and the reorts given the following sequence numbers (——— to ——— nclusive) were from his own practice (ward or private) in this Hospital and that in all instances he was the chief operator.

....Signature

....Official Title

Date.... ... .

Each case report should be typewritten on standard size paper, 8½ x 11 inches, and those reports then assembled in sequence. Covers should not be used for separate reports, as this increases their bulk unduly. Reports should be bound loosely together in a light outside cover not larger than 10 x 12 inches, so that they may be opened and held like a book. The following items should be observed:

I. Each case report should be headed by identifying information corresponding with that of the index lists, including sequence number, designation as a "Residency" or "Own Practice" case, and so on.

II. The report of the case should begin with:

1. Preoperative diagnosis.
2. Postoperative diagnosis (based on findings).

III. The report should be in condensed form, not reported in detail. Follow-up findings of not less than six (6) months are essential. Omissions of follow-up examinations must be explained and justified.

IV. Obstetrical reports which do not include essential pelvic measurements and note of methods used, will be considered incomplete.

V. Critical summary or analysis of each report with critical deductions derived from correctness or incorrectness of candidate's procedures and from final results must be a final part of each report. Lacking such summary, *reports will be considered incomplete and will not be graded.*

GRADUATE TRAINING RESIDENCIES

This board, through the Council on Medical Education and Hospitals of the American Medical Association, has approved institutions providing acceptable residencies in obstetrics and gynecology.

The American Board of Obstetrics and Gynecology has established the following requirements for its approval of a residency in a hospital department or service:

1. It is most desirable that the Chief of Service of the Department be certified by the board, in the interests of the proper teaching of the specialty of obstetrics and gynecology. In lieu of such certification the board will approve of persons of recognized high professional standing in the specialty. At least one additional senior member of the staff should be similarly qualified.

2. Exceptions to the foregoing, in respect to the certified status of Chiefs of Service and others as outlined above, can be made by assent of the Committee on Residency Training for adequate and justifiable reasons. As examples of the latter, the degree of F.A.C.S. in obstetrics-gynecology may be accepted in lieu of one of the two required certifications if the general reputation of the person concerned is known to the Committee as national or sectional in scope, or a professorial rank without certification might be acceptable.

3. In instances where the services of obstetrics-gynecology are not combined but are separate in any given hospital, the Chief of each such service seeking approval and at least one of his subordinates must be certified or otherwise qualified as outlined above.

If obstetrics and gynecology are not combined in one department, approval can be granted only if arrangements are made for some degree of rotation of residents between both services, provided both services are separately approved.

4. If gynecology is classified in the given hospital as a subdivision or subservice of general surgery, approval cannot be granted for residency training in gynecology. Exceptions have been made if the subdivision of gynecology is headed and staffed by a chief and at least one other certified by this board or otherwise qualified as specialists in obstetrics-gynecology, as specified above, thus insuring an acceptable educational program in obstetrics-gynecology.

5. Effective July 1, 1948, "temporary approvals pending survey" were discontinued. It is expected that all presently approved hospitals will soon be initially surveyed, if holding temporary approval, or resurveyed and redesignated if holding unconditional approval.

6. Departments holding official approvals for residency training are cautioned that their totals of residents appointed must be kept to the number specified in the A. M. A.—American Board approval notification. Dilution of training facilities by unauthorized appointment of residents in excess of these numbers may be cause for reinspection and changes in approval status of such hospitals and their special services.

7. For further details of requirements and qualifications for approval for residency training, hospital officials should refer to the latest special issues of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION as they appear during each year, dealing with these subjects, *or should apply to the Council on Medical Education and Hospitals of the American Medical Association for bulletins entitled Essentials of Approved Residencies and Fellowships.*

8. Application for residency approval must be made in triplicate on special forms provided for this purpose. These forms may be obtained from the Secretary of the Council on Medical

Education and Hospitals of the American Medical Association. All statements amplifying an application should also be made in triplicate. The hospital should keep a duplicate of all papers.

9. The formal application, with all papers, for residency training approval should be submitted primarily to the Council on Medical Education and Hospitals of the American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois. Action is taken jointly by the Council and this Board after survey by the Council.

10. Approvals are granted according to adequacy of the training program and teaching facilities of various institutions on the following several bases: (a) one-year approval in obstetrics and gynecology (combined) or one-year approval in obstetrics and/or in gynecology (separate), correlated basic science instruction being an essential part of the first year; (b) two-year approval in obstetrics and gynecology (combined) or two-year approval in obstetrics and/or in gynecology (separate), provided there is opportunity in the latter instances for some degree of rotation between the two services as well as laboratory instruction in basic sciences; (c) three-year approval in obstetrics and gynecology (combined) or in obstetrics or in gynecology, provided there is opportunity for one to one and one-half years' service in the branch of the specialty opposite to that in which the candidate holds appointment, as well as laboratory instruction in the basic sciences of both branches.

Three (3) years' approval is available to institutions holding active medical school teaching affiliations. Other institutions may acquire three (3) years' approval if their educational programs and teaching facilities are adequate for such approval. Probably the most desirable type of approval, from the hospital's standpoint, is that of two (2) years in obstetrics and gynecology, because of the greater flexibility regarding appointments. These two (2) years may be the first two (2) following a trainee's internship or they may be the last two (2) of his formal training following an internship plus one (1) year of acceptable training in the specialty. A service with two-year approval may also, if it desires, appoint a man for only one (1) year, as for example, if he has already had two (2) years of approved training.

Many institutions with three-year approval appoint a group of men for the first year, promoting only part and releasing some of them at the end of this time. Other institutions are accredited for only one (1) year and both will from year to year provide partly trained men for the two-year institutions, which may thus complete a candidate's required training.

Some institutions may be granted one-year approval either because of limited facilities or, in certain instances, because of the preference of the institution, which may require that candidates for such positions must show evidence of having completed two (2) years of satisfactory training.

No stipulation has been made that an institution holding only one-year training approval must provide this as the first year of a candidate's formal training. It may be his second or even his third year, responsibilities being graded accordingly, but if it is his first year laboratory basic science instruction is an essential part.

On the other hand, candidates may be promoted from year to year in one place for their entire service of three (3) years if this institution is so approved and listed.

Exchange residencies within the specialty between approved institutions are acceptable and to be encouraged. Many authorities believe that training in more than one institution is broadening to the candidate. "Farming out" to unapproved institutions or services is not acceptable unless the work of such services is directly and carefully supervised by the Chiefs of the service in the approved hospital under which the man is actively appointed and working. This should be attested by such Chiefs.

Exchange residencies into other specialties cannot be permitted to subtract from the minimal required three (3) years of training divided between obstetrics-gynecology.

As noted elsewhere, two (2) years of post-training practice limited to the specialty is necessary before a candidate becomes eligible for certification.

This board has no objection to residency services being arranged by hospitals for periods longer than three (3) years, unless this dilutes the candidate's clinical training opportunities too much during the first three (3) years. However, the board does not accept a fourth year, or more, of residency training as a substitute for any part of the required two (2) years of post-training practice. The importance of post-training practice in the specialty is emphasized as an opportunity for maturing of the candidate and for colleague appraisal of a man's ability when working on his own responsibility in his chosen community.

Exception to this ruling may be made for men advancing from their training into and planning to remain in full-time teaching positions. These men then must complete at least two (2) years in such positions. Consequently the only institutions in which men may work as fourth and fifth-year residents and obtain credit for this time as "post-training practice" are those directly affiliated with approved schools of medicine as teaching hospitals for undergraduate instruction. These "full-time" men must hold faculty appointments, must have teaching duties with undergraduate students, must be given independent authority more than that of residents, and must make a declaration of intention to remain in full-time teaching work.

11. Lists of officially approved institutions for formal residency training appear regularly in certain issues of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. Detailed information about any of these can be obtained from the Association.

12. Any physician formally obligating himself to serve a residency in a Council on Medical Education and Hospitals of the American Medical Association-American Board of Obstetrics and Gynecology approved hospital and thereby eliminating other possible candidates from the position, who breaks his contract without justifiable cause, either before beginning his service or during his period of service, except by mutual consent and agreement between the candidate and the hospital, may be barred from the examinations for certification at the discretion of the board.

13. It should be recalled by all concerned that credits for graduate training may be obtainable in certain instances for residency or assistantship service in hospitals not officially approved for residency training. Each such case must be individually considered, and credits will be largely dependent on the teaching qualifications of those in charge of the service, and the clinical facilities of the hospital in question.

PRECEPTORSHIP TRAINING

After July 1, 1955, the board will no longer accept training solely by preceptorship in fulfillment of educational requirements for admission to examination. To be eligible for preceptorship thereafter the candidate must have had a minimum of one year formal residency training in an institution approved by the board for residency training in obstetrics and/or gynecology.

After the above date candidates who apply for preceptorship training must notify the secretary of the board of such intent and give the name of the proposed preceptor. He must also request the preceptor immediately to notify the secretary of the board in writing, giving hospital connections, available clinical material, opportunity for basic study, and the plan of the proposed teaching program. As has long been true of residency training programs such as preceptorship, arrangements will be reviewed by the residency training committee of the board in advance for approval or disapproval. If the program is approved, the official preceptorship training form will be forwarded to the preceptor.

The preceptor must supervise closely the candidate's work and keep an informative record of the candidate's performance. The preceptor and the preceptee shall report in writing to the secretary of the board at the end of each six months of preceptorship, outlining the progress of the training program. This information will be placed in the candidate's application for admission to examination in order that it may be evaluated by the credentials committee.

As a general rule each year of preceptor training will receive a six months' credit toward the total of three years of training necessary for admission to examination. As is the case with candidates whose training has been entirely by formal residency, each application will be evaluated finally by the credentials committee.

An acceptable preceptor preferably shall be one certified by the American Board of Obstetrics and Gynecology and must have been certified for a minimum of five years. Fellowship in the American College of Surgeons or long experience and established reputation as an obstetrician-gynecologist without either of the above qualifications may qualify the preceptor.

Preceptor and preceptee must work in a hospital approved by the Joint Commission on Accreditation of Hospitals.

The post-training practice requirements cannot be carried on concurrently with preceptorship training.

CERTIFICATION

Each certificate granted or issued does not itself confer or purport to confer on any person any degree or legal qualifications, privileges or license to practice obstetrics or gynecology, nor does the board intend in any way to interfere with or limit the professional activities of any duly licensed physician. Its chief aim is to standardize qualification for specialists in obstetrics and gynecology, and to certify as specialists those who voluntarily appear before the board for such recognition and certification, according to its regulations and requirements.

The board does not subscribe to any hospital rule that certification is to be required for medical appointments especially in ranks lower than chief or senior staff of hospitals, or associate professorship in schools of medicine, for the obvious reason that such appointments constitute desirable specialist training.

Even though certification or its full equivalent may be considered a desirable requisite to appointment in key positions, as on the senior or chief staff, particularly of hospitals expecting to conduct approved services for training of residents, it was never intended by this board that certification should be required by any hospital as a prerequisite to appointment, especially in such lesser positions.

AMERICAN BOARD OF OPHTHALMOLOGY

Walter S. Atkinson, Chairman, Watertown, N. Y.
Francis H. Adler, Vice-Chairman, Philadelphia.
William L. Benedict, Consultant, Rochester, Minn.
Conrad Berens, Consultant, New York.
Frederick C. Cordes, Consultant, San Francisco.
Georgiana D. Theobold, Consultant, Oak Park, Ill.
James H. Allen, New Orleans.
Alson E. Braley, Iowa City, Iowa.
Gordon M. Bruce, New York.
Paul A. Chandler, Boston.
F. Bruce Fralick, Ann Arbor.
Michael J. Hogan, San Francisco.
John S. McGavic, Bryn Mawr, Pa.
Brittain F. Payne, New York.
Edwin B. Dunphy, Secretary-Treasurer, Boston.
Merrill J. King, Assistant Secretary, Brookline, Mass.
Miss Lea M. Stelzer, Registrar, 56 Ivie Road, Cape Cottage, Maine.

Address all communications to the American Board of Ophthalmology, Cape Cottage, Maine.

NO DEGREES OR LEGAL RESTRICTIONS

Each certificate granted or issued does not of itself confer or purport to confer on any person any degree or legal qualifications, privileges or license to practice ophthalmology, nor does the board intend in any way to interfere with or limit the professional activities of any duly licensed physician. Its chief aim is to elevate the standards of qualification for specialists in ophthalmology and to certify as specialists doctors of medicine who appear before the board for such recognition and certification, according to its requirements and regulations.

REQUIREMENTS

All candidates must comply with current board regulations regardless of time of filing application. The board, acting as a committee, reserves the right to reject an applicant for any reason deemed advisable and without stating the same, and the action of the board shall be final. Many candidates write the secretary outlining their training and asking for an estimate of their status and the further training required. The board's requirements are published to provide this information, and any candidate should be able to estimate his eligibility after studying these requirements. Individual officers or members of the board cannot and will not make such estimates. They will be made only by the Committee on Requirements, upon submission of the application for examination and the payment of the registration fee which must accompany it. Personal interviews with officers and members of the board should not be requested at any time.

PREREQUISITES

1. High ethical and professional standing.
2. Full citizenship in the country where the candidate practices. (Limited to countries of North and South America, their possessions and territories and the Philippine Republic.)
3. A degree from a medical school of high standing, satisfactory to the board and approved by the Council on Medical Education and Hospitals of the American Medical Association. An applicant whose training has been received outside of the United States and Canada must present credentials satisfactory to the board and is required to have the certificate of the National Board of Medical Examiners if he has been in practice less than ten years.
4. Completion of an internship of not less than one year in a hospital approved by the same Council.
5. Completion, by the time of the written Qualifying Test, of not less than thirty-six months (a total of sixty months is required of candidates practicing both ophthalmology and otolaryngology) of combined study, training, and practice of ophthalmology in approved medical schools, hospitals, clinics, dispensaries, laboratories, preceptorships, and private practice.

GENERAL REQUIREMENTS FOR ALL CANDIDATES

1. Application forms must be filled out completely and accurately. Letters of endorsement, together with any other required credentials, must be sent to the secretary's office before the deadline date.
2. Fee of $100 remitted with application.
3. A list of papers or books published.
4. Written qualifying test.
5. Practical examination.
6. Special review of ophthalmic surgery.
7. Membership in the American Medical Association, or such other societies as are recognized for the purpose by the Council on Medical Education and Hospitals of the American Medical Association.

FEES

For written test and original examination, $100 (as mentioned above).

Repeating Written Qualifying Test, $65.

Repeating Practical Examination, $65.

Single conditions, Written or Practical, $25.

Two or more conditions, $35.

Written qualifying test must be taken within three years of date of application. Thereafter new application and fee are required.

The fees have been carefully computed on a basis of cost of examinations and are used entirely for administrative expenses. Examiners serve without compensation other than actual expenses.

SPECIAL TRAINING

This shall include:

1. Graduate study of the basic medical sciences which are fundamental to the intelligent practice of ophthalmology, particularly: anatomy, histology, embryology, optics, physiologic optics, visual physiology and psychology, pathology, bacteriology, pharmacology, disorders of ocular motility and binocular vision, perimetry, and in the skilful adjustment and use of in-

struments such as the ophthalmoscope, retinoscope, slit lamp and microscope. Mere factual knowledge is not sufficient; the candidate must have had training in the application of these subjects and in their use in clinical ophthalmology, especially in refraction.

2. Active clinical experience in approved hospitals, clinics, dispensaries and private practice. Library and laboratory facilities should be utilized for intensive study of cases.

The subject matter to be covered under 1 and 2 is outlined in the syllabus prepared by the board.

These requirements may be met in various ways:

BASIC STUDIES

Anatomy
Embryology and developmental abnormalities
Biochemistry
Pathology
Bacteriology and immunology
Optics and physiologic optics
Ocular physiology
Medical Ophthalmology
Therapeutics and pharmacology
Neuro-ophthalmology

These may be covered by:

A. *Graduate Study.*—By a curricular course in the basic sciences related to ophthalmology in an approved graduate medical school.

B. *Postgraduate Study.*—By courses in individual basic sciences related to ophthalmology as given at various approved institutions. The Home Study Course of the American Academy of Ophthalmology and Otolaryngology is recommended.

C. *Residency.*—By advanced study of these subjects during a residency and by correlation of the principles involved with clinical problems.

D. *Research, Fundamental and Clinical.*—By the detailed study, under supervision or as assistant to an experienced research worker, of some problem or topic which brings the basic sciences into direct relation with the concrete clinical problem.

CLINICAL EXPERIENCE

A. By residency in an approved hospital. The most desirable of these residencies have regular lectures covering the entire field of clinical ophthalmology and of the basic subjects as applied in clinical practice. Many of these have seminars at which residents report cases which they have carefully worked up. These are discussed by the other residents and by the staff and the method of presentation as well as the subject matter critically considered.

B. By residencies in hospitals where regular instruction by lectures and quizzes and seminars is not available. The syllabus issued by the board will guide the resident in his selection of topics to be studied.

C. By fellowships in ophthalmology.

D. By preceptorship with a well trained and critical ophthalmologist.

E. After completing a residency it is of great advantage to secure a position in a clinic as fellow or assistant. This may require only part time work, but due credit will be given. Its value to the student depends on how much study he puts into it and on how competent his seniors are.

F. Research under competent critical and sympathetic supervision will give first hand insight into (1) the methods whereby old knowledge was and new knowledge is acquired and (2) the pitfalls which accompany attempts to enlarge the sphere of knowledge. Only in this way can the candidate evaluate basic facts in the intelligent critical way which is expected of the specialist in practice.

G. The candidate who cannot secure the type of residency he desires should not despair, for his progress depends far more on how he uses his opportunities than on the opportunities themselves.

MILITARY SERVICE

Credit for military service is given on an individual basis, each case being considered on its own merits and the amount of credit allowed is determined by the board when the information is submitted with the application.

WRITTEN QUALIFYING TEST

Before being accepted for examination, candidates are given a written test to ascertain their qualifications. The questions may cover any part of ophthalmology and are especially devoted to the basic studies as listed above. The written test will be given in several principal cities at the same time. Choice of cities is determined largely by the geographical distribution of candidates. Candidates found acceptable will be notified to appear for a subsequent practical and clinical examination in ophthalmology.

EXAMINATIONS

Examinations usually are held annually at or near the time and place of the meeting of the American Medical Association; also at other times and places at the discretion of the board, depending on the number of applications from any region.

The board reserves the right to limit the number of candidates to be admitted to any scheduled practical examination.

Candidates must be examined in all subjects listed in the sections titled Basic Studies and Practical and Clinical Examination.

PRACTICAL AND CLINICAL EXAMINATION

The subjects of the practical examination are as follows: (1) External Diseases, (2) Ophthalmoscopy, (3) Histopathology, (4) Refraction, (5) Motility, (6) Ophthalmic Surgery, and (7) Perimetry.

1. *External Diseases of the Eye and Adnexa.*—Various methods of examination, diagnoses and treatment.

2. *Ophthalmoscopy.*—Patients will be examined by the candidate and the findings described or drawn. A candidate is required to bring his own ophthalmoscope.

3. *Pathology.*—The candidate will demonstrate familiarity with general clinical pathology as well as the etiology, pathology, and bacteriology of diseases of the eye. He will be asked to examine microscopic slides and to recognize normal and pathologic histology of the eye.

4. *Refraction.*—A candidate will examine patients and show mastery of various methods, and of the principles of refraction and of retinoscopy. He should bring his own retinoscope.

5. *Motility.*—The candidate will demonstrate on patients his familiarity with routine methods of examination and diagnosis.

6. *Ophthalmic Surgery.*—Examination of surgical patients and discussion on principles of ophthalmic surgery.

7. *Perimetry.*—The candidate will be given an opportunity to examine patients by use of the arc perimeter, the tangent screen and the stereocampimeter. He may also be required to interpret charted fields.

SPECIAL REVIEW OF SURGICAL CASES

The board now requires of all candidates a list of ophthalmic operations performed within two years prior to examination. This list is to be presented with application.

The operations should be listed in groups of each type of surgery. The numbers of operations in each group must be totalled and the total number of all operations shown. This list must contain the following data:

1. Date.

2. Condition or conditions for which operation was performed. Complications during hospitalization.

3. Name and character of operation.

4. Identification by hospital or clinic number, or the name of a consultant or conferee who was present at the time of operation.

Circumstances which prevent any candidate from fulfilling this requirement should be fully explained, with detailed statement of candidate's surgical experience.

CERTIFICATION

The decision of the board is final as to the candidate's passing, failure or partial failure. The final action of the board is based on the candidate's ethical and professional record, training and attainments, as well as on the results of his formal examinations.

Certified ophthalmologists should refer to themselves as diplomates of the American Board of Ophthalmology. (There are only 12 members of the board and these are elected from the 3 component societies.)

REEXAMINATION

Candidates may be reexamined as often as they desire on satisfactory evidence of adequate additional preparation and payment of reexamination fee. When a candidate is conditioned in one or more subjects the Committee on Examinations shall decide on the merits of the case and the length of time that must elapse before reexamination in these subjects. A minimum of two years additional preparation is required of candidates who fail in all subjects. The board may, at its discretion, deny the candidate the privilege of reexamination.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY

William T. Green, President, Boston.
Clarence H. Heyman, Vice-President, Cleveland.
Hugh Smith, Memphis.
Don E. King, San Francisco.
William M. Roberts, Gastonia, N. C.
Mather Cleveland, New York.
Charles J. Frankel, Charlottesville, Va.
George J. Garceau, Indianapolis.
Harold A. Sofield, Secretary-Treasurer, 122 S. Michigan Ave., Chicago 3.

RULES AND PROCEDURES

I. General Eligibility Requirements

1. Satisfactory moral and ethical standing in the profession.

2. Graduation from a medical school of the United States or Canada, recognized at the time of graduation by the Council on Medical Education and Hospitals of the American Medical Association, or graduation from a foreign school considered satisfactory by the aforementioned Council.

3. Completion of an internship of not less than one year in a hospital approved at that time by the Council on Medical Education and Hospitals of the American Medical Association or, if trained in foreign countries, in institutions considered satisfactory by the American Board of Orthopaedic Surgery.

4. Starting in 1952 and continuing subsequently, applicants taking Part I examinations for the first time must have completed not less than one year of resident training in general surgery in a hospital approved by the Council on Medical Education and Hospitals of the American Medical Association, or present evidence of comparable training in general surgery considered satisfactory by the American Board of Orthopaedic Surgery. The minimum of one year of training in general surgery is in addition to the minimum of one year of internship.

5. Completion of formal requirements for Part I or Part II examinations. These formal requirements can be satisfied only by training in one or two categories:

(*a*) resident orthopedic training
(*b*) preceptorship training

Applicants may no longer be admitted to examinations, or be certified, on the basis of extensive specialized practice and/or teaching appointments and/or many short unapproved courses.

6. Restriction of practice to orthopedic surgery.

II. Requirements for Part I Examinations

1. Completion of and compliance with aforementioned general eligibility requirements.

2. Citizenship in the United States or Canada, or possession of citizenship papers showing intent to become a full citizen.

3. Satisfactory completion of a minimum of one year of approved training in orthopedic surgery under a program of resident orthopedic training, or completion of a minimum of five years of orthopedic training under a preceptorship program.

Starting in 1952 and continuing subsequently, in addition to the aforementioned requirements, applicants taking Part I examinations for the first time will be required to have satisfactorily completed a minimum of two years of approved training in orthopedic surgery instead of one year previously required. Applicants training on preceptorship programs will still be required to have completed a minimum of five years of orthopedic training.

4. Evidence of competence in training.

5. Approval for examination by the Committee on Eligibility of The American Board of Orthopaedic Surgery.

III. Requirements for Part II Examinations

1. Successful completion of Part I examinations.

2. Full citizenship in the United States or Canada.

3. License to practice in the United States or Canada.

4. Membership in the American or Canadian Medical Association.

5. Satisfactory completion of a minimum of three years of approved resident training in orthopedic surgery, plus a minimum of two subsequent years of practice period for applicants trained under resident orthopedic training programs.

6. Satisfactory completion of a minimum of five years of practice period for applicants trained under preceptorship programs.

7. Evidence of competence in practice.

8. Approval for examination by the Committee on Eligibility of the American Board of Orthopaedic Surgery.

IV. Application and Examination Fee Schedule

1. Application for Part I, fee $15, not returnable.

2. Examination, Part I, fee $35, payable only if approved for examination. Approved candidates failing to appear for scheduled examinations forfeit fees.

3. Application for Part II, fee $15, not returnable.

4. Examination, Part II, fee $50, payable only if approved for examination. Approved candidates failing to appear for scheduled examinations forfeit fees.

5. Reexamination, Part I, fee $35; for Part II, fee $50. No application fee is required for reexamination.

V. Applications

1. Applications for Part I examinations must be received in the office of the secretary of the board before Nov. 30 of the year preceding the examinations.

2. Applications for Part II examinations must be received in the office of the secretary of the board before Aug. 15 of the year preceding the examinations.

3. Notices of acceptance for admission to the Part I examinations are mailed to eligible candidates during the month of February in the year of the examinations.

4. Notices of acceptance for admission to Part II examinations are mailed to eligible candidates during the month of November in the year preceding the examinations.

5. Questions of eligibility for examinations are decided by the Committee on Eligibility of the board. This committee meets twice yearly. The secretary is not empowered to rule on questions of eligibility.

VI. Examinations

1. Part I examinations are held once yearly, usually in April or May, in various centers in the United States.

2. Part II examinations are held once yearly, usually in one center, immediately preceding the meeting of The American Academy of Orthopaedic Surgeons.

VII. CERTIFICATION

1. Applicants who successfully pass Part I examinations will receive no certificate but will be notified by letter by the secretary.

2. Applicants who successfully pass Part II examinations receive a Certificate of the Board, which states that they have been found qualified to practice the specialty of orthopedic surgery in those fields in which they have been trained and examined.

3. Candidates obtaining certification without training and examination in children's orthopedic surgery may subsequently add certification in children's orthopedic surgery by completing a minimum of one year of approved resident orthopedic training in children's orthopedic surgery and successfully passing examination in that field. A practice period of one year is required following completion of resident training, prior to examination for additional certification.

VIII. APPROVED RESIDENCIES

1. In the United States, resident training must be taken in institutions approved for resident training in orthopedic surgery by the Council on Medical Education and Hospitals of the American Medical Association. All approved institutions are listed at frequent intervals in the Internship and Residency Number of THE JOURNAL. Lists may be obtained from the American Medical Association and are not obtainable from the board.

2. The integral parts of approved residencies are designated in lists by the following symbols: A—Adult Orthopedic Surgery; C—Children's Orthopedic Surgery; F—Fracture Surgery; and S—Basic Science training. Approved lengths of training in institutions is also designated.

3. Candidates electing an additional year of training in adult orthopedic surgery and fracture surgery in lieu of a year in children's orthopedic surgery may satisfy requirements by continuing their training beyond the designated approved length of time in institutions approved for adult orthopedic surgery or adult orthopedic surgery and fractures.

4. Credit for resident training is not retroactive. Candidates must receive resident training in institutions during periods that such institutions are on the approved list. If candidates are in training at institutions at the time that such institutions become approved, resident training credit may be granted from the start of the training period provided that the program is judged to have been satisfactory.

5. Candidates in resident training, or possessing signed contracts for future resident training in institutions which become disapproved, either in whole or part, receive resident training credit for the entire period during which their contracts are in force.

6. The term "fellow" is considered synonymous with "resident" when the position occupied and the work performed is equal in all functions. Fellowships in institutions having residents, in which training and responsibilities are not equal, are not credited as resident training.

7. Institutions approved for resident training in orthopedic surgery by the Council on Medical Education and Hospitals of the American Medical Association may, with prior acceptance by the American Board of Orthopaedic Surgery and notification to the Council, utilize the training facilities of institutions not individually approved for resident training by the aforementioned Council, provided that:

(*a*) The training supplements services in the same categories in which the institution responsible for training is approved by the Council.

(*b*) The resident spends at least half of the minimum required time in each category of training in institutions approved by the Council.

8. Foreign residencies must satisfy the American Board of Orthopaedic Surgery.

9. Application for approval of the training facilities of any institution must be made to the Council on Medical Education and Hospitals of the American Medical Association, and inspection of such facilities is made by representatives of the Council. Final approval is a joint function of the Council and the American Board of Orthopaedic Surgery.

IX. REQUIREMENTS OF RESIDENT ORTHOPEDIC TRAINING

1. Institutions approved for full three year programs including all parts of the training requirements may integrate all parts so that they are given concurrently.

2. Institutions now approved for less than three years of orthopedic resident training should arrange with other approved institutions to provide complete three year programs for all residents. It is planned that such desirable complete programs, with their participating institutions, will be listed separately.

3. The minimum requirements of resident orthopedic training are as follows:

(*a*) One year of training in adult orthopedic surgery.

(*b*) Six months of training in the basic sciences.

(*c*) Six months of training in fracture surgery.

(*d*) One year of training in children's orthopedic surgery *or, if elected, an additional year of training in adult* orthopedic surgery and fracture training in place of training in children's orthopedic surgery.

4. Candidates who elect an additional year of training in adult orthopedic and fracture surgery instead of a year in children's orthopedic surgery may satisfy the requirements by taking the additional year of training in adult orthopedic surgery or six months of adult orthopedic surgery and six months of fracture surgery, but may not take the entire year of training in fracture surgery.

5. Training in adult and children's orthopedic surgery must include observation and first hand experience in diagnosis, treatment, operative and postoperative care of orthopedic problems.

6. Training in fracture surgery must include observation and first hand experience in diagnosis, treatment, operative and postoperative care of recent and old fractures.

7. Training in the basic sciences must instill a sound knowledge of anatomy, pathology, physiology, bacteriology, and biochemistry as these basic sciences apply to orthopedic surgery.

8. Candidates may complete the training requirements by training in several approved institutions provided that all the aforementioned minimum requirements are satisfied on approved services.

9. No training period of less than six consecutive months in one institution may be credited toward resident training requirements, except a few short courses on the board's approved list and recognized supplementary services of approved institutions.

10. Candidates in resident training may not engage in private practice.

11. Candidates in resident orthopedic training must receive their training in institutions and may not receive credit for time spent assisting in private office practice, which is considered as preceptorship training.

12. Candidates trained on accelerated programs during the war years are credited with one year of training for each nine months' residency on established accelerated programs.

X. REQUIREMENTS OF PRECEPTORSHIP TRAINING

1. The preceptor must possess certification by the American Board of Orthopaedic Surgery.

2. The practice of the preceptor must be extensive enough to give the candidate experience in all phases of orthopedic practice.

3. The preceptor must devote special periods of time each week, outside of the routine hours employed in hospitals and office practice, to assist the candidate with organized courses of study similar to those received during resident training.

4. If facilities and instruction in the related basic sciences are not available, the candidate must spend a minimum of six months as a student in an institution approved for basic science training in orthopedic surgery.

5. The candidate must train as a full time assistant to the preceptor and may not maintain a separate office or engage in individual practice.

6. The minimum training period in orthopedic surgery under the preceptorship program is five years, after which time the candidate may file application for Part I examinations.

7. The minimum practice period required for candidates trained under the preceptorship program is five years, after which time the candidate may file application for Part II examinations. This makes a minimum total of 10 years from the start of orthopedic training to eligibility for Part II examinations.

8. The practice period may be satisfied in individual private practice or in assistantship or partnership as desired by the candidate.

9. Candidates who combine preceptorship training with approved resident training receive credit for the preceptorship portion of their training only if it totals a minimum of two years. Two years of preceptorship training are credited as the equivalent of one year of resident training. The practice period requirement is likewise evaluated so that three years of practice are required if the candidate submits two years of preceptorship and two years of resident training, and four years of practice are required if four years of preceptorship and one year of resident training are submitted.

XI. Sequence of Examinations and Practice Requirements

1. No person may take Part II examinations until after successful completion of Part I examinations.

2. Successful completion of Part I examinations in no way obligates the board to declare a candidate eligible for Part II examinations.

3. Regardless of how extensive or prolonged a practice a candidate may have had prior to completing the training requirements, such time may not be credited toward practice requirements. All practice requirements must be satisfied subsequent to completion of training requirements.

4. Candidates may not be admitted to examinations on the basis of prolonged practice but must qualify on the basis of formal training in one of the categories previously detailed.

XII. Practice Requirements

1. Candidates must maintain high ethical and professional standards.

2. Candidates must strive to increase their scientific knowledge.

3. Candidates must limit their practice to orthopedic surgery.

4. Candidates who have had no approved training in children's orthopedic surgery must confine their practice to fracture and adult orthopedic surgery.

5. Candidates trained in resident orthopedic training are required to complete a minimum of two years of orthopedic practice subsequent to the completion of their formal training before becoming eligible for Part II examinations.

6. Candidates in private practice must spend a minimum of 14 months in one locality immediately prior to application in order that practice may be properly evaluated.

7. Candidates employed full time in institutions may satisfy practice requirements by serving a minimum of two years, but minimum requirements may not be satisfied by mixing full-time institutional work with preceding or subsequent time in private practice.

8. Candidates trained by preceptorship are required to complete a minimum of five years of orthopedic practice before becoming eligible for Part II examinations. The practice period may be independent of the preceptor.

XIII. Method of Examination

1. Part I examinations consist of a written examination and oral examinations. Material covered includes fundamental surgical principles, elementary fracture and orthopedic procedures, history-taking and physical examinations as well as those parts of anatomy, pathology, physiology, and biochemistry related to orthopedic surgery. The oral examinations consist of five parts: (*a*) anatomy, (*b*) pathology, (*c*) physiology and biochemistry, (*d*) surgery and (*e*) fractures and orthopedic surgery.

2. Part II examinations consist of a written examination and oral examinations. Material covered includes advanced work in all phases of orthopedic surgery. The oral examinations consist of five parts: (*a*) anatomy, (*b*) pathology, (*c*) children's orthopedic surgery, (*d*) fractures and (*e*) adult orthopedic surgery.

3. Candidates who have not had approved training in children's orthopedic surgery will not be examined in that branch of orthopedic surgery.

4. Candidates are notified by letter as to whether they passed or failed in the examinations. No information regarding results is available until such letters are mailed.

5. Results of integral parts of examinations are not available to either candidates or diplomates of the board.

6. Candidates who have passed Part I examinations are required to take Part II examinations within a 10 year subsequent period. If there is a lapse of more than 10 years, candidates must repeat Part I examinations and must then become eligible by the requirements then in force.

XIV. Reexaminations

1. Applicants who fail to pass Part I or Part II examinations may be reexamined a second or third time in each Part, but must pay the prescribed examination fee each time of reexamination.

2. Applicants who fail to appear for second and, if necessary, third reexaminations within three years after first failure must submit new applications with the appropriate fees.

3. After three successive failures in Part I or Part II examinations, applicants must present evidence of additional orthopedic training satisfactory to the board before submitting new applications.

XV. Military Service

1. Medical officers who have elected service in the military forces as their life careers compete for certification on the same basis as do physicians in civilian practice.

2. Physicians who served for a minimum of one year in the military forces during the war years, between Jan. 1, 1941, and July 1, 1946, are granted a bonus of one year of practice credit, provided that the same time is not used for resident training credit.

3. Applicants who served in military hospitals whose service is judged by the board to have been equal to that of approved resident orthopedic training, and who were on such service for a minimum of one year between Jan. 1, 1941, and July 1, 1946, may be granted credit for one year of resident orthopedic training, provided that the same time is not used for practice credit. Applicants requesting such credit must submit completed "Record of Professional Assignments" booklets with their applications.

4. No applicant may be granted more than one year of resident training credit and one year of practice credit for military service during the war years.

5. After July 1, 1946, credit for orthopedic training must have been or must be obtained by assignment as residents in military hospitals on the approved list for resident orthopedic training, the same as in civilian life.

6. Medical officers assigned to civilian institutions on the approved list for resident orthopedic training receive the same credit as do civilian candidates.

7. Medical officers who have elected service in the military forces as their life careers must satisfy the practice requirements by military assignments in which their duties are limited to the practice of orthopedic surgery.

XVI. Records of Surgical Cases and Inspections

1. Records of a specified number of consecutive surgical cases may be requested by the board in order to evaluate properly the work of an applicant.

2. A representative of the board may visit a community in order to evaluate properly the work of an applicant.

AMERICAN BOARD OF OTOLARYNGOLOGY

Officers of the Board

Frederick T. Hill, President, Waterville, Maine.
Gordon D. Hoople, Vice-President, Syracuse, N. Y.
Dean M. Lierle, Secretary-Treasurer, University Hospitals, Iowa City.

Senior Counselors

George M. Coates, Philadelphia.
Ralph A. Fenton, Portland, Ore.
Gordon F. Harkness, Davenport, Iowa.
Carl H. McCaskey, Indianapolis.
Harris P. Mosher, Marblehead, Mass.
W. E. Sauer, St. Louis.
Ernest M. Seydell, Wichita, Kan.
Frank R. Spencer, Boulder, Colo.
Fletcher D. Woodward, Charlottesville, Va.

Board of Directors

Lawrence R. Boies, Minneapolis.
Louis H. Clerf, Philadelphia.
Daniel S. Cunning, New York.
Russell M. Decker, Pasadena, Calif.
Lyman H. Heine, Fremont, Neb.
Frederick T. Hill, Waterville, Maine.
Gordon D. Hoople, Syracuse, N. Y.
Percy E. Ireland, Toronto, Canada.
Francis L. Lederer, Chicago.
Francis E. Le Jeune, New Orleans.
Dean M. Lierle, Iowa City.
H. I. Lillie, Rochester, Minn.
John R. Lindsay, Chicago.
Bernard J. McMahon, St. Louis.
William J. McNally, Montreal, Canada.
James H. Maxwell, Ann Arbor, Mich.
Philip E. Meltzer, Boston.
Lewis F. Morrison, San Francisco.
Werner Mueller, Boston.
C. Stewart Nash, Rochester, N. Y.
Henry B. Orton, Newark, N. J.
Arthur W. Proetz, St. Louis.
LeRoy A. Schall, Boston.
Harry P. Schenk, Philadelphia.
O. E. Van Alyea, Chicago.

GENERAL REQUIREMENTS

The following general qualifications of candidates for examination are required by the board:

1. A candidate must have been a citizen of the United States or the Dominion of Canada for three years or more.
   - (*a*) A candidate must have been a graduate five years or more of a medical school approved by the Council on Medical Education and Hospitals of the American Medical Association.
   - (*b*) A candidate must be of known good moral character and be ethical in his professional relationships.
   - (*c*) A candidate trained in a foreign country must be able to give proof of medical and graduate training comparable to the requirements of the Board.
   - (*d*) A candidate from the United States or the Dominion of Canada must be a member of the American Medical Association or of the Canadian Medical Association respectively or other such medical societies of equal standing as are recognized by the Council on Medical Education and Hospitals of the American Medical Association.

2. Candidates from foreign countries, who have received their training in otolaryngology in the United States are eligible for examination at the discretion of the board, providing they show proof that they are permanent residents and citizens of their respective foreign countries and provided they meet the general academic requirements of the board.

SPECIAL REQUIREMENTS

1. A candidate must have had a general internship, of at least one year, in a hospital approved by the Council on Medical Educations and Hospitals of the American Medical Association.

2. A candidate must be proficient in the applied basic sciences, fundamental to the intelligent practice of otolaryngology. These include anatomy of the ear, nose, and throat, neck, chest, esophagus and nervous system, gross pathology and histopathology, bacteriology, physiology, didactic otolaryngology and the general fundamentals of surgery. (This requirement may be fulfilled in a residency or fellowship service or in an approved organized postgraduate course.)

3. In addition to the general internship, the required clinical training in otolaryngology may have been acquired in any of the following ways:
   - (*a*) A three years' approved residency or fellowship in otolaryngology approved by the Council on Medical Education and Hospitals of the American Medical Association.
   - (*b*) A four years' approved residency or fellowship in otolaryngology and ophthalmology approved by the Council on Medical Education and Hospitals of the American Medical Association, provided one half of the training has been in otolaryngology.
   - (*c*) A two years' approved residency or fellowship in otolaryngology or a three years' approved combined residency or fellowship in otolaryngology and ophthalmology, provided two years have been in otolaryngology and have been preceded by at least one year's approved residency training in surgery or medicine, or by an additional year in an approved internship.[*]

4. In exceptional circumstances certain candidates who cannot meet all of the above requirements may be accepted for examination, on recommendation of the Credentials Committee, substantiated by action of the board.

5. At least one year must be spent in private, group or institutional practice of otolaryngology following the period of special training. This requirement may be waived in cases of candidates of foreign countries who are permanent residents and citizens of their respective countries and who are returning there for the practice of otolaryngology.[†]

6. A candidate may be qualified for examination, at the discretion of the American Board of Otolaryngology, if in addition to the General Requirements and Special Requirements, no. 1 and 2, he has limited his practice to otolaryngology for seven years in association with a hospital staff approved by the Council on Medical Education and Hospitals of the American Medical Association.

7. A physician who limits himself exclusively to the practice of peroral endoscopy may be granted limited certification in this field by the American Board of Otolaryngology irrespective of certification in any other specialty. Limited certification will be granted provided the candidate has spent not less than one year of training in a hospital approved for endoscopic teaching and has passed successfully examinations in the basic sciences as they pertain to this field, and didactic and clinical examinations covering diseases of the larynx, pharynx, neck, esophagus, stomach, tracheobronchial tree, lungs and mediastinum and cer-

---

[*] See Standards for Residencies in Otolaryngology published by the American Medical Association.

[†] When the requirement of an additional year referred to in 5 may impose handicaps as to rating in the military or Veterans Administration services, the candidate may be considered under 4 above.

tain aspects of cardiovascular disease as they pertain to preoral endoscopy. A limited certificate by the American Board of Otolaryngology will not be issued to physicians who have been certified in a specialty that employs peroral endoscopy in diagnosis and/or treatment because his major interest is in that specialty, not in endoscopy.

All candidates must comply with current board regulations, regardless of the time of filing application.

APPLICATION AND FEES

1. Application must be made in duplicate on special blanks procured from the secretary. The completed application blanks must be returned to the secretary, together with the other required credentials, at least 120 days in advance of the examination at which the candidate desires to appear.

2. The applications must be accompanied by two small photographs of the candidate, together with *verification* of the period of enrollment from the institutions where training in otolaryngology was obtained, and the names of two or more otolaryngologists, preferably diplomates of the board, from the vicinity of the candidate's place of residency, to be used as references.

3. The fee for the examination is $150. Of this sum $75 must accompany the application, of which $50 shall be returned if candidate is not accepted for examination. No application will be acted on until the $75 application fee is received. The remaining $75 of the total examination fee of $150 must be paid to the secretary on notification that the candidate has been accepted. A reexamination fee of $75 is required of candidates conditioned in one or more subjects.

4. The fees have been carefully computed on a basis of cost of examinations and are used entirely for administrative expenses. Examiners serve without compensation other than actual expense.

5. The application remains valid for three years. An applicant must appear for examination within this time or forfeit the fee.

6. Candidates whose credentials have been found satisfactory and who meet the requirements of the board will be notified 90 days prior to the date of examination. The number of candidates who can be admitted to any one examination is limited. Due to a large number of applications on file, delay in assignment for examination may be inevitable. Appointments will be given in the order applications are accepted and on payment of the balance of the examination fee.

7. The board, acting as a committee of the whole, reserves the right to reject an applicant for any reason deemed advisable and without stating the same, and the action of the board shall be final.

EXAMINATION

Examinations will be held at such time and place as the judgment of the board may dictate. Advance notice of examinations will be given in The Journal of the American Medical Association and the several special journals devoted to otolaryngology. Insofar as is possible these will be held biannually at, or near, the time and place of meeting of the American Medical Association, or special societies, and of the American Academy of Ophthalmology and Otolaryngology. The examinations cover from two to four days.

Scope.—This examination encompasses all phases of otolaryngology and peroral endoscopy, including maxillofacial surgery, and surgery of the neck, excluding the thyroid.

The type of examination is as follows:

1. Clinical, covering the actual handling of patients, including history taking, physical and functional examinations, the use of laboratory and x-ray findings and a discussion of differential diagnosis.

2. Didactic, oral examinations covering all phases of otolaryngology.

3. Gross and microscopic pathology.

4. A written examination may be included when the board deems this advisable.

REEXAMINATION

A candidate who is conditioned in examination may be admitted to a subsequent examination after one year and within the three year period dating from his application, on payment of an additional fee of $75 and 120 days' notice of intention to appear is required.

AMERICAN BOARD OF PATHOLOGY

James B. McNaught, President, Denver.
Shields Warren, Vice-President, Boston.
Roger Baker, Durham, N. C.
Israel Davidsohn, Chicago.
A. S. Giordano, South Bend, Ind.
James W. Kernohan, Rochester, Minn.
Douglas MacFadyen, Chicago.
Robert A. Moore, Pittsburgh.
James N. Patterson, Tampa, Fla.
S. Brandt Rose, Philadelphia.
John R. Schenken, Omaha.
William B. Wartman, Secretary-Treasurer, 303 E. Chicago Ave., Chicago 11.

A. General Requirements

1. Satisfactory moral and ethical standing in the profession.

2. License to practice medicine or a certificate of the National Board of Medical Examiners.

3. The applicant must devote his time primarily and principally to the practice of pathology.

B. Professional Education

1. Graduation from a medical school in the United States approved by the Council on Medical Education and Hospitals of the American Medical Association, or graduation from a medical school in other countries acceptable to the board.

C. Special Training and Experience

1. The board admits candidates to examinations who are otherwise eligible and who have had either of two following types of training and experience.

(*a*) After five years, if four of the five years have been in institutions approved by the Council on Medical Education and Hospitals of the American Medical Association or by the board; or

(*b*) After eleven years if none of the training and experience has been in institutions so approved.

2. The specific requirements for those acceptable after five years are as follows:

(*a*) Pathologic anatomy only.

(1) Four years of supervised study and training in an institution approved for residency training in pathologic anatomy by the Council on Medical Education and Hospitals of the American Medical Association or by the board. It is immaterial whether the candidate holds the title of resident or fellow or assistant. Candidates may, at their own election, substitute not to exceed twelve months of a straight or rotating clinical internship or a fellowship or instructorship in any of the preclinical departments of a university for one of the four years. In addition, time, not to exceed twelve months, spent in a department of pathology of an approved school of medicine after the completion of the second year of undergraduate study may be counted for full credit toward the four years.

(2) One additional year, which may be a continuation of the preceding or may be independent practice of pathologic anatomy in a hospital approved by the American Medical Association or other institutions acceptable to the board.

(*b*) Clinical pathology only.

(1) Four years of supervised study and training in an institution approved for residency training in clinical pathology by the Council on Medical Education and Hospitals of the American Medical Association or by the board. It is immaterial

whether the candidate holds the title of resident or fellow or assistant. Candidates may, at their own election, substitute not to exceed twelve months of a straight or rotating clinical internship or a fellowship or instructorship in any of the preclinical departments of a university, for one of the four years. Candidates holding also a master's or doctorate degree in a special field of clinical pathology (bacteriology, serology, chemistry, parasitology, or hematology) may obtain time credit for not more than twelve to twenty-four months toward the four years for this work, regardless of whether it was taken before or after the medical degree. The evaluation of time credit will depend on how much of the broad field of clinical pathology was covered in the graduate work.

(2) One additional year, which may be a continuation of the preceding or may be independent practice of clinical pathology in a hospital approved by the American Medical Association or other institutions acceptable to the board.

(*c*) Pathologic anatomy and clinical pathology.

(1) Four years of supervised study and training divided as follows:

(*a*) Two years of supervised study and training in pathologic anatomy as outlined in the preceding paragraph 2-(*a*)-(1).

(*b*) Two years of supervised study and training in clinical pathology as outlined in the preceding paragraph 2-(*b*)-(1). Candidates declared eligible before July 1, 1953, may at their own election substitute one year (twelve months) of a straight or rotating clinical internship for one year of this special training in clinical pathology. After July 1, 1953, all candidates applying for both pathologic anatomy and clinical pathology will be required to have two years of supervised training in clinical pathology.

(2) One additional year which may be a continuation of the preceding or may be independent practice of both pathologic anatomy and clinical pathology in a hospital approved by the American Medical Association or other institutions acceptable to the board. After July 1, 1953, candidates who elect to claim credit for one year for a clinical internship must take this fifth year as supervised study and training in clinical pathology in institutions approved for residency training in clinical pathology by the Council on Medical Education and Hospitals of the American Medical Association or by the board. Candidates declared eligible after July 1, 1953, who do not take a clinical internship, may, after four years of training as outlined in 2-(1)-(*a*) and (*b*), spend the fifth year in independent practice in an institution or laboratory acceptable to the board.

NOTE: As outlined in the preceding paragraphs, the total time requirements of the board are unchanged after July 1, 1953, namely, five years of study or practice after graduation from medical school, with exceptions noted in sections 2-(*a*)-(1) and 2-(*b*)-(1).

3. The specific requirements for those acceptable after eleven years are as follows:

(*a*) The practice of pathology under circumstances acceptable to the board for a period of not less than eleven years. At the election of the candidates, a period not to exceed one year of straight or rotating clinical internship may be substituted for one of the eleven years. For those candidates in this category who have had some special study and training in pathologic anatomy or clinical pathology acceptable under paragraphs 2-(*a*), (*b*) or (*c*), double time credit will be allowed. Thus, if a person has two years of acceptable supervised study and training, only seven years of practice are required.

D. SPECIAL QUALIFICATIONS

1. Prior to Dec. 31, 1947, the board at its discretion certified candidates without examination, if the following conditions were met as of July 1, 1939:

(*a*) That the candidate has been for a period of five years of professorial rank in a department of pathology in an approved medical school; or

(*b*) That the candidate had been practicing pathology for ten years in a senior position in a hospital having an adequate department of pathology, approved by the Council on Medical Education and Hospitals of the American Medical Association or in an institution acceptable to the board.

CREDIT FOR MILITARY SERVICE

Credit may be allowed for training and experience in pathology in the federal services during the period July 1, 1940, to June 30, 1947. This credit for training or experience or both is given on an individual basis and will depend on the opportunity the applicant has had, as indicated by his or her medical service record in the specialty of pathology.

After July 1, 1947, credit for those military services will be given on the same basis as it is in civilian institutions, except that the rule in the preceding paragraph will not apply to reserve officers who continue on active duty or are called to active duty after that date.

SPECIAL FIELDS OF PATHOLOGY, CLINICAL CHEMISTRY, CLINICAL MICROBIOLOGY, HEMATOLOGY, AND NEUROPATHOLOGY

(IN FORCE AFTER JULY 1, 1954)

The trustees of the American Board of Pathology have adopted the following requirements for certification in special fields of pathology, effective July 1, 1954.

Candidates who have met all general requirements and have had special training and experience that is acceptable to the board in a special field of pathologic anatomy or clinical pathology may apply to the board for certification in that special field. The board, at its discretion, may approve this application, and after the candidate has successfully passed a prescribed examination or has fulfilled certain special qualifications (see below, section D), will issue a certificate designating the special field.

A. General Qualifications:
  1. Satisfactory moral and ethical standing in the profession.
  2. License to practice medicine or a certificate of the National Board of Medical Examiners.
  3. The applicant must devote his time primarily and principally to the practice of pathology or the special field of pathology in which he is requesting certification.

B. Professional Education:
  1. Graduation from a medical school in the United States approved by the Council on Medical Education and Hospitals of the American Medical Association or graduation from a medical school in other countries acceptable to the board.

C. Special Training and Experience:

  The board admits candidates to examination in special fields of pathology who are otherwise eligible and who have had either of the following types of training:
  1. Applicants already holding a certificate of the board in clinical pathology or the combined certificate in pathologic anatomy and clinical pathology (for qualification in clinical chemistry, clinical microbiology, and hematology), or in pathologic anatomy (for qualification in neuropathology)—two additional years of supervised training in the special field of their choice in institutions approved by the Council on Medical Education and Hospitals of the American Medical Association or by the board.
  2. Applicants not holding a certificate in pathologic anatomy or clinical pathology—five years of training in the special field of their choice, provided four of the five years have been in institutions approved by the Council on Medical Education and Hospitals of the American Medical Association or by the board. Candidates may, at their own election, substitute not

to exceed 12 months of a straight or rotating clinical internship or a fellowship or instructorship in any of the preclinical departments of a university for one of the four years. The fifth year may be a continuation of supervised training or may be independent practice of the particular specialty in a hospital approved by the American Medical Association or in other institutions acceptable to the board.

D. Special Qualifications—Certification Without Examination: Prior to Jan. 1, 1960, the board at its discretion may certify candidates without examination if the following conditions have been met as of Jan. 1, 1955:

1. That the candidate has been for a period of five years of professorial rank in the special field of his choice and in an approved medical school, or
2. That the candidate has been practicing his specialty for 10 years in a senior position in a hospital having an adequate department in the special field, approved by the Council on Medical Education and Hospitals of the American Medical Association, or in an institution acceptable to the board.

APPLICATION BLANK AND FEE

Application must be made on the special form which may be procured from the secretary and forwarded with other required credentials and the application fee. An application cannot be given consideration by the board unless it is accompanied by the application fee.

The application or examination fee for candidates is $40. If the candidate fails in his examination he will be admitted to a second examination after one year, but not later than three years. After two reexaminations, the applicant must file a new application and pay an additional fee before a fourth examination will be given.

The application fee of $40 has been determined after careful consideration and is based on actual estimates of the expenses of examination and administration. None of the board members receive any compensation for their services except actual expenses incurred.

If the applicant, for any reason, is deemed ineligible for examination by the board, his fee will be returned; however, the application fee is not returnable after the candidate has officially been accepted for examination and notified to report for the examination.

EXAMINATIONS

Written and oral examinations will be held at the discretion of the board at or near the time and place of national medical meetings. If a number of applications from any region of the country are received, an examination in conjunction with a national medical meeting in that section will be arranged so that the financial outlay of the applicant in meeting the examiners will be as small as possible.

The examinations are to be based on the broad principles of pathology with emphasis on diagnosis, interpretation and technic. The applicant may apply for certification in either pathologic anatomy or clinical pathology or both.

The examinations in pathologic anatomy consist of a written test, an oral examination on gross pathology and a practical examination in microscopic pathology. The examination in clinical pathology consists of a written test and an oral and practical examination in the six phases of clinical pathology: bacteriology, hematology, clinical chemistry, parasitology, serology, and clinical microscopy.

DEFINITIONS

1. Pathologic anatomy is that branch of pathology which deals with the morphologic aspects of disease, recognition being given that that definition covers two phases of pathology.

(*a*) The applied phase with special attention to the description and diagnosis of gross and microscopic specimens.

(*b*) The academic phases of teaching and general morphologic diagnosis.

2. Clinical pathology is that branch of pathology which deals with bacteriology, immunology, clinical chemistry, parasitology, hematology, endocrinology, and clinical microscopy, the application of the physical and biologic sciences to the diagnosis, prognosis, and treatment of disease.

BOARD NOT AN EDUCATIONAL INSTITUTION

The board is in no sense an educational institution and the certificates of the board are not to be considered degrees. Therefore, the certificate does not confer on any person legal qualifications, privileges, or license to practice medicine or the specialty of pathology. The board does not purport in any way to interfere with or limit the professional activities of any licensed physician. Its chief aim is to standardize the qualifications for the specialty of pathology and to issue certificates to those voluntarily complying with the requirements of the board.

CRITERIA FOR APPROVAL OF INSTITUTIONS FOR TRAINING IN PATHOLOGY

In Sections C-2-a, C-2-b, and C-2-c of the General Requirements, it is stated that candidates must have certain periods of supervised study and training. The American Board of Pathology, in cooperation with the Council on Medical Education and Hospitals of the American Medical Association, certifies hospitals in the United States as satisfactory for this supervised study and training. Lists of these hospitals are published in the Internship and Residency Number of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION each year. In addition, the American Board of Pathology recognizes certain hospitals outside the United States and certain laboratories not connected with hospitals in the United States. Inquiries concerning these should be directed to the Secretary of the Board.

The general criteria for approval of hospitals and laboratories are both qualitative and quantitative. On the score of quality, consideration is given to the qualifications of the Director of Laboratories and the associates and assistants, the supervision of work of the person in training, the excellence of the educational program, and the exactness and completeness of the laboratory work performed. On the score of quantity, consideration is given to the volume and distribution of laboratory work, both in absolute numbers and in relation to the size of the hospital, to the diversity and completeness of tests performed, to the size and equipment of the laboratory, and to the number of professional and nonprofessional personnel in relation to the volume of work.

In general, the qualitative standards will determine whether or not a hospital or laboratory is approved, and the quantitative standards will determine whether the approval is for 1, 2, 3 or 4 years of credit toward the requirements of the board.

In evaluation of applications the board takes into consideration the following criteria:

1. Director of laboratories or pathologist:
    - (*a*) It is required that the responsible head of the laboratory hold the certificate of the American Board of Pathology in the subject for which the hospital is approved, or be eligible for certification, and that he or she spend full time in the hospital. Full time is not interpreted in terms of hours, but rather that the director have no obligation outside the one approved hospital except in a university department of pathology where he and the residents have an opportunity to participate in the educational program;
    - (*b*) In special instances, the equivalent of full time by two or more qualified persons will be accepted and one person need not spend the entire working day in the laboratory;
    - (*c*) In special instances, two or more hospitals will be approved as a unit with a single full-time director of laboratories if it is apparent that a satisfactory training program can be conducted;
    - (*d*) In hospitals with over 350 beds, it is expected that the professional staff, in addition to the pathologist, will include one or more persons with special training and qualifications in the subspecialties of clinical pathology.

2. Technicians:

   There are no absolute criteria, but it is expected that the number of technicians will be proportional to the volume of laboratory work and that, insofar as possible, the technicians will hold the certificate of the Registry of Medical Technologists of the American Society of Clinical Pathologists.

3. Floor space of laboratory:

   In general, it is believed that the size of the laboratory should be related to the size of the hospital and the volume of laboratory work. A minimal ratio is 4 square feet of space in the laboratory, including morgue and autopsy room, for each bed in the hospital.

4. Equipment for the laboratory:

   The variety and completeness of laboratory tests performed depends on the size of the hospital. In all hospitals there should be facilities for the more common tests in clinical pathology, for study of surgical specimens, and for performance of autopsies. In larger hospitals, the variety of tests performed should be larger and in hospitals with over 500 beds all recognized laboratory procedures should be available for study and treatment of the patients.

5. Autopsy percentage:

   No institution with a percentage of less than 15 will be approved, and those institutions with percentages between 15 and 40 will be given special scrutiny.

6. Examination of surgical specimens:

   All surgical specimens should be sent to the laboratory for gross examination, and microscopic examinations should be made unless there are general or special reasons not to do so.

7. Indices:

   There should be indices according to the names of the patients and the diagnoses of all surgical and autopsy material. Indices of clinical pathology are left to the discretion of the hospital.

8. Museum:

   There should be available fixed anatomic and pathologic specimens for study by the staff in proportion to the size of the hospital. Properly filed and indexed color photographs may in part be substituted for museum specimens.

9. Library:

   A reasonably complete library of modern books and recent unbound and bound journals should be available to the hospital, and the more commonly used books and journals should be on hand in the laboratory.

10. Educational program:

    The work of the person in training should be supervised. Conferences, seminars, journal clubs, and demonstrations should be conducted as frequently as the volume of material and the size of the staff justifies. A clinicopathologic conference must be held at least every 2 weeks.

11. Volume of laboratory work:

    (*a*) As indicated in the following categories, no hospitals with less than 75 autopsies, 1,000 surgical specimens, and 25,000 tests in clinical pathology annually will be approved (Category D), except as outlined in the following paragraphs. It is the belief of the board that less material than this is inadequate for the training of a pathologist.

    (*b*) In the field of clinical pathology, there should be a reasonable diversification of tests and in each category there should be sufficient absolute volume to provide training and experience. There are no absolute criteria, but special scrutiny will be given to a hospital in which there is not a reasonable diversification and variety.

    (*c*) In the field of pathologic anatomy, a deficiency in either autopsies or surgical specimens may be made up by an excess of the other, if the deficiency does not exceed 20 per cent of the minimum required in the ratio of 1 autopsy to 75 surgical specimens. Thus in a hospital approved for one year in pathologic anatomy and clinical pathology, the minimums are 75 autopsies and 1,000 surgical specimens. If a hospital has 2,500 surgical specimens, it is acceptable if there are only 60 autopsies.

If a hospital has met these minimal qualitative and quantitative standards, it will then, on the basis of the following quantitative standards, be approved for 1, 2, 3 or 4 years of training in pathologic anatomy, or clinical pathology, or both, or some special field as shown for the number of residents indicated.

CATEGORY A. In both pathologic anatomy and clinical pathology for 4 years (as required of all candidates seeking certification in both fields who are examined after July 1, 1952).

Minimum: 150 autopsies, 1,750 surgical specimens, and 65,000 tests in clinical pathology for 4 residents. Additional resident for each 50 autopsies or 500 surgical specimens, or 20,000 tests in clinical pathology.

CATEGORY B. In both pathologic anatomy and clinical pathology for 3 years. This meets all requirements of the board for supervised training until July 1, 1952. Candidates examined after that date who seek certification in both subjects must take an additional year of supervised training in clinical pathology or pathologic anatomy, in another hospital, which is approved for the deficiency of training required.

Minimum: 125 autopsies, 1,500 surgical specimens and 50,000 tests in clinical pathology for 3 residents. Additional resident for each 50 autopsies, 500 surgical specimens, or 20,000 tests in clinical pathology.

CATEGORY C. In both pathologic anatomy and clinical pathology for 2 years. Candidates taking two years in these institutions must have an additional year (2 years after July 1, 1952) in an institution in category A, B, or D.

Minimum: 100 autopsies, 1,250 surgical specimens, and 40,000 tests in clinical pathology for 2 residents. Additional resident for each 50 autopsies, or 500 surgical specimens, or 20,000 tests in clinical pathology.

CATEGORY D. In both pathologic anatomy and clinical pathology for 1 year. Candidates taking training in these institutions must have an additional 2 years (3 years after July 1, 1952) in institutions which are approved for the deficiency of training required.

Minimum: 75 autopsies, 1,000 surgical specimens, and 25,000 tests in clinical pathology for 1 resident. Additional resident for each 50 autopsies, or 500 surgical specimens, or 20,000 tests in clinical pathology.

CATEGORY E. In pathologic anatomy only, for 3 or more years. Candidates taking all training in these institutions will not be eligible for certification in clinical pathology unless an additional year (2 years after July 1, 1952) is taken in clinical pathology in institutions which are approved for the deficiency of training required.

Minimum: 175 autopsies and 1,500 surgical specimens for 3 residents. Additional resident for each 50 autopsies or 500 surgical specimens.

CATEGORY F. In pathologic anatomy only, for 2 years. Candidates taking training in these institutions will not be eligible for certification in clinical pathology unless they take one additional year full time in clinical pathology (2 years after July 1, 1952) in institutions which are approved for the deficiency of training required, and will be eligible in pathologic anatomy only if another year is taken in another institution which is approved for one or more years in pathologic anatomy.

Minimum: 125 autopsies and 1,250 surgical specimens for 2 residents. Additional resident for each 50 autopsies or 500 surgical specimens.

CATEGORY G. In pathologic anatomy only, for 1 year. Candidates training in these institutions will not be eligible in both pathologic anatomy and clinical pathology unless they take an additional year in pathologic anatomy and an additional year (2 years after July 1, 1952) in institutions which are approved for these periods of training. Candidates seeking certification in pathologic anatomy only must study an additional 2 years in institutions which are approved for that period of training.

Minimum: 75 autopsies and 1,000 surgical specimens for 1 resident. Additional resident for each 50 autopsies or 500 surgical specimens.

CATEGORY H. For postmortem part of pathologic anatomy for 2 years. Credit is never allowed for more than 2 years. Candidates taking training in these institutions may pursue further training as follows: 1. For pathologic anatomy only. An additional year in an institution in Category A, B, C, E, F, or G with assignment to surgical pathology principally. 2. For pathologic anatomy and clinical pathology. An additional year (two years after July 1, 1952) in an institution in Category A, B, C, L, M, or N with assignment to clinical pathology and ½ year assigned to surgical pathology principally, in an institution in Category A, B, C, or J.

Minimum: 125 autopsies for 2 residents. An additional resident for each 60 autopsies.

CATEGORY I. For postmortem part of pathologic anatomy for 1 year. Candidates taking training in these institutions may pursue further training as follows: 1. For pathologic anatomy only. An additional two years in an institution in Category A, B, C, E, F, or G with general assignments. 2. For pathologic anatomy and clinical pathology. An additional year (2 years after July 1, 1952) in an institution in Category A, B, C, L, M or N with assignment to clinical pathology and 1 year to an institution in Category A, B, C, E, F or G.

Minimum: 75 autopsies for 1 resident.

CATEGORY J. Surgical pathology part of pathologic anatomy for 1 year. Credit is never allowed for more than 1 year and the director of the laboratory must hold the certificate of the American Board of Pathology in pathologic anatomy or be eligible for certification. Candidates training in these institutions may pursue further training as follows: 1. For pathologic anatomy only. An additional 2 years in an institution in Category H or in an institution of Category A, B, or C with assignment to postmortem pathology only. 2. For pathologic anatomy and clinical pathology. An additional year (2 years after July 1, 1952) in an institution in Category A, B, C, L, M or N with assignment to clinical pathology full time, and an additional year to an institution in Category A, B, D, E, F, G or H with assignment to postmortem pathology full time.

Minimum: 2,000 surgical specimens for 1 resident. An additional resident for each 1,000 surgical specimens.

Category K. Special pathology as part of pathologic anatomy. Credit for not to exceed ¼ the time credit (1 year if seeking certification in pathologic anatomy only, 6 months if seeking both pathologic anatomy and clinical pathology) of candidates applying in pathologic anatomy may be taken in special laboratories with limited activities such as neuropathology, orthopedic pathology, ophthalmic pathology, etc. The candidate who receives credit in this category may, on request, have the field of special pathology designated on the certificate of the board.

CATEGORY L. Clinical pathology for 3 or more years. Candidates taking 3 years of training in these institutions will not be eligible for pathologic anatomy unless they take an additional 2 years in institutions approved for pathologic anatomy.

Minimum: 100,000 tests in clinical pathology for 3 residents. Additional resident for each 50,000 tests.

CATEGORY M. Clinical pathology for 2 years. Candidates taking two years' training in these institutions must take the same additional training as in Category L to be eligible for pathologic anatomy also. To be eligible for clinical pathology only, an additional year of clinical pathology must be taken in an approved institution.

Minimum: 75,000 tests in clinical pathology for 2 residents. An additional resident for each 50,000 tests.

CATEGORY N. Clinical pathology for 1 year. Candidates taking training in those institutions must take an additional 2 years in an institution in Category A, B, C, L, or M assigned to clinical pathology for eligibility in clinical pathology only. To be eligible in pathologic anatomy and clinical pathology, an additional 2 years in approved institutions is required.

Minimum: 50,000 tests in clinical pathology for 1 resident.

CATEGORY O. Special clinical pathology as part of clinical pathology. Candidates applying for clinical pathology only may receive credit for not in excess of ¼ of the training period (1 year if seeking certification in clinical pathology only, six months if seeking both pathologic anatomy and clinical pathology) for work in a special field of clinical pathology, such as bacteriology, serology, etc. Under these circumstances, on request, the special field will be designated on the certificate of the board.

CATEGORY P. Research: Residence in certain institutions in which full time is devoted to research with a direct application to the practice of pathologic anatomy or clinical pathology may be accepted for credit not to exceed one-third the time requirement (20 months if no clinical internship, 16 months if a clinical internship was taken). The board encourages research and believes that all candidates should carry on investigation during their training in all institutions. Therefore, this category is only for those wishing to do full time research.

AMERICAN BOARD OF PEDIATRICS

A. ASHLEY WEECH, President, Cincinnati.
J. A. JOHNSTON, Vice-President, Detroit.
RALPH V. PLATOU, Secretary-Treasurer, New Orleans.
JAMES M. BATY, Boston.
LEE F. HILL, Des Moines, Iowa.
JAMES G. HUGHES, Memphis, Tenn.
WALDO E. NELSON, Philadelphia.
ARTHUR H. PARMELEE, Los Angeles.
HENRY G. PONCHER, Valparaiso, Ind.
JOHN MCK. MITCHELL, Executive Secretary, 6 Cushman Rd., Rosemont, Pa.

REQUIREMENTS FOR CERTIFICATION[1]

All candidates for examination for certification must meet the following requirements:

1. Graduation from an approved medical school.
2. One year of rotating, pediatric, or other internship in an approved hospital.
3. Two years of specialized residency-type training in an approved pediatric center.

On May 1, 1946, it was ruled that at least one year of the two years of required residency training must be a full time medical pediatric in-patient residency or internship in an approved institution. Because of the shortage of residencies, the board at this time voted that "temporarily" the second year of required residency training might be met in the ways listed below, although the board recommends that whenever possible candidates complete the two years as regular residents.

(*a*) All applicants admitted to approved graduate or postgraduate courses in pediatrics on or after July 1, 1950, shall receive residency training credit for that number of months actually spent in full time attendance at such courses, in excess of three months and up to a maximum of twelve months. No credit shall be granted for part time graduate or postgraduate courses. Courses of less than three months are credited only under special circumstances.

(*b*) A maximum of three months' credit each is allowed for full time residency type training in allied pediatric subjects, such as pediatric allergy, pediatric psychiatry, pediatric pathology, pediatric radiology, newborn service, etc.

---

[1] To avoid misunderstanding, the board urges any candidate whose training is not clearly covered in these regulations to communicate with the office of the executive secretary. Whenever possible, this should be done before entering upon the appointment in question.

(c) A maximum of six months' credit is allowed for residency training in an approved contagious disease hospital.

4. A subsequent term of two years of specialized study or practice or a combination of the two. Credit for one year toward this requirement is allowed for medical military service regardless of the assignment. Credit in excess of one year may be granted if the medical officer is engaged in full-time pediatrics, or may be prorated if a considerable proportion of time is spent in pediatrics. It must be noted, however, that the maximum credit that any candidate may receive toward the practice requirement for work done prior to the completion of residency training is one year.

Attention is invited to the fact that the primary duty of the resident must be the care of patients under supervision, if full credit in satisfaction of the residency training requirement is expected. Research residencies which involve little or no clinical training are creditable for only three months. Research residencies which include significant clinical training may be prorated to a total of six months for a year of service. Teaching fellowships may not be offered in lieu of residency appointments.

Both research residencies and teaching fellowships are, of course, entirely acceptable in satisfaction of the practice or further study requirement. Portions of a research residency not applicable for residency training credit may be carried over for practice credit.

Preceptorships are not accepted for credit toward the residency requirement, but are accepted toward the practice requirement.

The board defines service in a pediatric center as full time devoted to rounded experience in an approved hospital which includes responsibility for care of patients on ward and outpatient services, experience with newborn, including prematures, and both therapeutic and preventive pediatrics. It is expected that the service will include adequate graduate training in the basic medical sciences, as well as in the clinical, laboratory, and public health aspects of the specialty.

GRADUATES OF MEDICAL SCHOOLS IN CANADA

Graduates of approved medical schools in Canada and those who have received their internship and residency training in pediatrics in hospitals approved by the Royal College of Physicians and Surgeons of Canada, will be eligible for examination for certification under the same regulations as those trained in the United States.

GRADUATES OF FOREIGN MEDICAL SCHOOLS

Citizens of the United States.—Effective Jan. 1, 1954, citizens of the United States of America who are graduates of medical schools other than those in the United States and Canada, will be processed for eligibility for examination for certification, if they can meet all the following requirements:

1. They are graduates of a medical school recommended by the Council on Medical Education and Hospitals of the American Medical Association.
2. They hold a license to practice in the United States.
3. They can meet the internship and residency training requirements of the board as detailed above with the following provisions:
    - (a) Internship and residency training must be served in hospitals approved by the board in the United States.
    - (b) A maximum of the internship and one year of residency training may be allowed for such experience obtained in a small list of foreign hospitals recognized by the board. The other year of residency training must be served in a straight inpatient medical pediatric residency appointment in an approved hospital in the United States.

Citizens of Other Countries.—Properly qualified candidates who are permanent residents in and citizens of other countries and are legally qualified to practice medicine there, and who have received their training in pediatrics in the United States of America or Canada may apply for certification by the American Board of Pediatrics. A special certificate may be issued to foreign candidates (not citizens of the United States of America or Canada), who have received their training in pediatrics in the United States of America or Canada and who are returning to their own country at the end of their training period, upon passing successfully the regular examination of this board, without completion of the requirement of two full years in the practice of pediatrics. This special certificate shall be appropriately identified to distinguish it from the regular certificate of this board. Upon completion of the above training requirements, all candidates must pass both written and oral examinations prior to certification.

INFORMATION CONCERNING EXAMINATIONS

The examinations for certification are given in two sections: Part I is written; Part II is an oral examination.

PART I—WRITTEN

Written examinations are objective in type and are given once each year, usually in January, simultaneously at a number of places scattered throughout the country. Effective Jan. 1, 1953, candidates must pass the written examination before admission to the oral examination will be authorized. In case of failure, the written examination may be retaken at yearly intervals for a total of three times.

PART II—ORAL

Oral examinations are held four to six times each year at centers offering suitable facilities, in locations determined by proximity to the largest number of eligible candidates. One examination session each year is scheduled at a location closer to candidates from some less populous area. As far as possible, candidates are given a choice of location, taking into account date application is filed, date of eligibility, and proximity to the examination site.

APPLICATION

Application must be made on special blanks, which will be furnished by the executive secretary after a preliminary survey of the applicant's training. Applications may be submitted one year in advance of eligibility date; they will not be accepted earlier. The number of candidates admitted to a given written examination will be determined by the number who can be examined orally during that year, plus a reasonable number of alternates.

FEES

The application fee is $100.

The full fee must be remitted with the application. Refund will be made only if the applicant is refused examination for reason other than failure in the same.

No additional fee is required for second and third written examinations. The fee for second and third oral examinations is $50 each.

Members of the board receive no financial recompense of any kind beyond their travel expenses to examinations and board meetings.

FAILURE IN EXAMINATIONS

As indicated above, a written examination must be passed before a candidate is eligible for oral examination. Reexaminations may be taken one and two years later. After a third failure, the situation will be reviewed by the board and a decision concerning subsequent procedure will be made.

Applicants who fail an oral examination become eligible for a second examination after a year has elapsed. After a second failure another examination will be permitted in one year. Before becoming eligible for a fourth examination a candidate must serve one year in a full-time medical inpatient residency in an approved institution. He must then reapply as a new candidate and pay a new fee.

POSTPONEMENT OF EXAMINATION

After acceptance of his application a candidate is expected to take the next written examination offered. If desired, he may postpone this examination for one more year. Any further postponement must be for due cause acceptable to the board.

After having passed the written examination, a candidate must appear for oral examination within two years, unless excused for due cause by the board.

After failure in either Part I or Part II, a candidate must appear for reexamination within two years unless excused for due cause by the board.

Failure to appear for examination within the period indicated above, unless excused by the board, will result in loss of eligibility to appear for examination. In this case $25 of the fee will be retained as a processing charge and the balance will be returned to the candidate. In order to be reinstated, a candidate must then submit a new application and a new fee.

LETTERS OF RECOMMENDATION AND BIBLIOGRAPHY

Letters from two competent pediatricians recommending each applicant must be sent to the executive secretary of the board. These letters should not accompany the application, but should be sent directly to the executive secretary. No member of the board, or official examiner, may recommend any applicant.

A list of papers or books published should be sent in with the application blank.

PURPOSE OF EXAMINATIONS

The purpose of these examinations is to determine the applicant's competency to practice pediatrics of high quality. Emphasis is therefore placed on practical aspects, but since good practice is founded on sound scientific data, the candidate must be prepared to demonstrate that he has a working knowledge of these basic data.

Clinical and abstract aspects of growth and development are fundamental parts of pediatric training, and about one-fourth of the oral examination is devoted to this phase of the subject. Diagnosis and treatment of disease fill another quarter, and the remainder of the examination is devoted to study and discussion of "cases."

Candidates who are admitted to the oral examination (Part II) will not be informed of their grade on the written portion. Their relative standing in Part I will, however, be utilized in the final decision with regard to passing.

Candidates who fail after taking Part II will not be required to retake Part I but may be advised to do so in order that they may have an opportunity to improve a low score.

CERTIFICATION IN SUBSPECIALTY OF ALLERGY BY THE AMERICAN BOARD OF PEDIATRICS, INC.

MEMBERS—SUBSPECIALTY BOARD OF PEDIATRIC ALLERGY

WILLIAM P. BUFFUM, Chairman, Providence, R. I.
WILLIAM C. DEAMER, San Francisco.
JEROME GLASER, Rochester, N. Y.
JAMES OVERALL, Nashville, Tenn.
BRET RATNER, New York.
ALBERT STOESSER, Minneapolis.

The American Board of Pediatrics, Inc., has established certification in allergy as a subspecialty of pediatrics.

All candidates must pass the written and oral examinations in pediatrics before submitting an application for examination in allergy.

Each allergy application is individually considered and must be accepted by the subspecialty board.

INFORMATION CONCERNING EXAMINATIONS

Allergy examinations consist of written and oral portions. The written examination will be given once a year under a local monitor and must be passed before admission to the oral examination will be authorized. Oral examinations will be held at times and places designated by the Chairman of the Subspecialty Board. Ample notice will be sent to candidates by the executive secretary.

FAILURE IN EXAMINATIONS

As indicated above, a written examination must be passed before a candidate is eligible for oral examination. Reexaminations may be taken one and two years later. After a third failure, the situation will be reviewed by the board and a decision concerning subsequent procedure will be made.

Applicants who fail an oral examination become eligible for a second examination after a year has elapsed. After a second failure another examination will be permitted in one year. Before becoming eligible for a fourth examination a candidate must serve one year full time in a satisfactory allergy clinic and its hospital including training in both allergy and pediatrics.

FEES

The application fee for certification in allergy will be $100 effective July 1, 1952.

The full fee must be remitted with the application. Refund will be made only if the applicant is refused examination for reason other than failure in the same.

No additional fee is required for second and third written examinations. The fee for second and third oral examinations is $50 each.

Members of the board receive no financial recompense of any kind beyond their travel expenses to examinations and board meetings.

Application forms will be forwarded on request to the office of the executive secretary and should be returned to that office when completed. All correspondence should be addressed to him.

REQUIREMENTS

1. Completion of two years of approved residency training in pediatrics.

2. Two years full time in a satisfactory allergy clinic and its hospital, including training in both allergy and pediatrics, or

3. One year full time in a satisfactory allergy clinic and its hospital, and two additional years of full attendance in a satisfactory allergy clinic and its activities, or

4. Five years attendance of not less than 300 hours per year at an allergy clinic associated with an approved medical school or in hospital clinics specifically approved for this purpose.

5. Preceptorship training alone is not acceptable. It may be utilized in combination with the methods outlined in paragraphs three and four above or with a full time formal graduate or postgraduate course in allergy to satisfy portions of the second and third years in three, or one of the five years in four.

The clinics should be in hospitals that have been accepted by the Council on Medical Education and Hospitals of the American Medical Association, and by the American Board of Pediatrics for training and certification in Pediatrics.

In general, a satisfactory allergy clinic is one which is headed by a certified allergist.

Under all methods of study, there must be presented evidence of serious work in research or clinical investigation, to demonstrate interest and industry in the study of allergy.

NATURE OF EXAMINATIONS

The candidates must expect a searching examination in both the theory and practice of allergy. This means that they must come prepared to do physical examinations on selected patients, take histories, and to discuss all details in diagnosis and treatment on the patients that have been assigned to them. In addition they may be called upon to discuss any theoretical question that the examiners may choose to bring up.

CERTIFICATE

When accepted the diplomate will receive from the American Board of Pediatrics a certificate in allergy and will be listed as a specialist in allergy.

Prospective applicants for certification in the subspecialty of allergy may apply to the executive secretary of the American Board of Pediatrics.

AMERICAN BOARD OF PHYSICAL MEDICINE AND REHABILITATION

Robert L. Bennett, Chairman, Warm Springs, Ga.
William H. Schmidt, Vice-Chairman, Philadelphia.
William Bierman, New York.
Donald A. Covalt, New York.
Kristian G. Hansson, New York.
O. Leonard Huddleston, Santa Monica, Calif.
A. B. C. Knudson, Washington, D. C.
Walter M. Solomon, Cleveland.
Arthur L. Watkins, Boston.
Walter J. Zeiter, Cleveland.
Earl C. Elkins, Secretary-Treasurer, 30 North Michigan Ave., Chicago 2.

QUALIFICATIONS FOR ELIGIBILITY TO EXAMINATION FOR CERTIFICATION

Each applicant for admission to the examination shall be required to present evidence that he has met the following standards:

1. GENERAL

A. Satisfactory moral and ethical standing in the profession.

B. Membership in the American Medical Association or membership in such Canadian or other medical societies as are recognized for this purpose by the Council on Medical Education and Hospitals of the American Medical Association. (Exceptions to the foregoing qualifications shall be made by the American Board of Physical Medicine and Rehabilitation for good and sufficient reasons.)

2. PROFESSIONAL

A. Graduation from a medical school recognized by the Council on Medical Education and Hospitals of the American Medical Association.

B. Completion of an internship, preferably of the general rotating type, of not less than one year in a hospital approved by the same council.

3. SPECIAL TRAINING

A. A period of study after the internship of not less than three years in clinics, dispensaries, hospitals or laboratories recognized by the same Council and by the American Board of Physical Medicine and Rehabilitation as competent to provide a satisfactory training in physical medicine and rehabilitation. Each year of training in such an approved program counts as two units against a total of eight units necessary for eligibility to both Parts I and II of the examination (see below). A total of only six credits may be earned in this manner.

B. This period of specialized preparation shall include: (1) graduate training in anatomy (including kinesiology and functional anatomy), physics (including radiation physics, electronics and medical instrumentation), physiology, pathology, and other basic sciences which are necessary to the proper understanding of physical medicine and rehabilitation; (2) an active experience of not less than two years in hospitals, clinics, dispensaries and diagnostic laboratories recognized by the Council on Medical Education and Hospitals and the American Board of Physical Medicine and Rehabilitation.

C. An additional period of not less than two years of practice in physical medicine and rehabilitation. One unit of credit is granted for each year of practice in physical medicine and rehabilitation.

D. Experience comparable to specialized training. Training in approved residency programs in closely allied medical-surgical fields may be acceptable in whole or in part, but maximum credit is limited and based on individual interpretation by the board. In selected cases, at the discretion of the board, two years of specialization in physical medicine and rehabilitation may be accepted as equivalent to one year formal training.

METHOD OF EXAMINATION

The examination for certification by the American Board of Physical Medicine and Rehabilitation is given in two parts. Part I is written, Part II, oral. Part I alone may be taken after the completion of six units of credit. Upon the completion of Part I, Part II may be taken after an additional two units of credit are obtained. Parts I and II combined may be taken only after a total of eight units of credit have been obtained.

The written and oral examination will cover certain aspects of the basic sciences as well as clinical physical medicine and rehabilitation.

A. The basic sciences as related to physical medicine and rehabilitation will include:

(*a*) Anatomy (including kinesiology and functional anatomy).

(*b*) Physics (including radiation physics, electronics, and instrumentation).

(*c*) Physiology (including physiology of movement and physiologic effect of the various physical agents used in physical medicine and rehabilitation).

(*d*) Pathology.

(*e*) Other fundamental sciences. The applicant will be examined concerning his knowledge of such subjects as biochemistry and bacteriology as related to physical medicine and rehabilitation.

B. The clinical aspects of physical medicine and rehabilitation will include:

(*a*) Those diseases and conditions that come within the field of physical medicine and rehabilitation. These include arthritis and the various rheumatic diseases, neuromuscular diseases such as poliomyelitis, cerebral palsy, and paraplegia, and musculoskeletal diseases, including the large group of traumatic and orthopedic conditions.

(*b*) The clinical usage of such physical agents as heat, water, electricity, ultraviolet radiation, massage and exercise, etc.

(*c*) An understanding of the basic principles of physical medicine and rehabilitation and the ability to coordinate the services of such personnel as clinical psychologist, social service worker, vocational guidance worker, etc.; the ability to prescribe specifically the therapy for patients for execution by the technical and ancillary personnel in a department of physical medicine and rehabilitation.

(*d*) A knowledge of the use of associated personnel within the field of physical medicine and rehabilitation such as the physical therapist, occupational therapist, clinical psychologist, and social service worker. This knowledge must include the ability to specifically prescribe patient care for execution by these therapeutic and technical groups.

APPLICATION

The application form shall contain a record of the candidate's premedical and medical training as well as of internships, graduate study, hospital or dispensary staff appointments, teaching positions, length of time practice has been limited to physical medicine and rehabilitation, membership in medical societies, medical papers published, and the names of three well known physicians to whom the board may write for professional and character references. Three letters of reference must be submitted with the application.

The application shall also be accompanied by one recent signed photograph of the candidate mounted on the application and the registration and examination fee of $100, which fee will cover both the written and oral examinations. (In case of rejection of application, this fee will be refunded with the exception of $15, which will be considered as a registration fee.)

CERTIFICATES

The certificate issued by the American Board of Physical Medicine and Rehabilitation shall be in such form as to comply with the articles of incorporation and bylaws and shall be signed by the chairman and the secretary-treasurer of the board and shall bear the official seal of the board.

Certificates of the board shall be issued to the effect that the applicant has been found qualified to practice physical medicine and rehabilitation.

AMERICAN BOARD OF PLASTIC SURGERY

James T. Mills, Chairman, Dallas, Texas.
Gustave Aufricht, Vice-Chairman, New York.
Wm. Milton Adams, Memphis, Tenn.
Truman G. Blocker Jr., Galveston, Texas.
Albert D. Davis, San Francisco.
S. Milton Dupertuis, Pittsburgh.
Frederick A. Figi, Rochester, Minn.
Paul W. Greeley, Chicago.
William G. Hamm, Atlanta, Ga.
Frank McDowell, St. Louis.
Gerald B. O'Connor, San Francisco.
Arthur Neal Owens, New Orleans.
Lyndon A. Peer, Newark, N. J.
Clarence R. Straatsma, New York.
Bradford Cannon, Secretary-Treasurer, Boston.
Estelle E. Hillerich, Corresponding Secretary, 4647 Pershing Ave., St. Louis 8.

REQUIREMENTS

GENERAL QUALIFICATIONS

The following requirements are in agreement with those promulgated by the Advisory Board for Medical Specialties and by the Council on Medical Education and Hospitals of the American Medical Association.

1. Moral and ethical standing in the profession satisfactory to the board.

The board, believing that the practice of "fee splitting" is pernicious, leading as it does to traffic in human life, will reserve the right to inquire particularly into any candidate's practice in regard to this question.

2. Those whose activities are limited to the practice of plastic surgery.

3. This board will accept as applicants for examination only those who are *full citizens* of the United States or Canada. Notarized statements, *not original citizenship papers*, attesting to the fact of full citizenship in the United States or Canada must be furnished by foreign born applicants when the application is filed. Such candidates must have at least two years of practice in plastic surgery in North America after completing the training required by the board.

PROFESSIONAL REQUIREMENTS FOR QUALIFICATION

The board considers the requirements outlined below to be minimal in attaining its purposes, and encourages candidates to take advantage of broadening experience in other fields. Candidates must fulfill the requirements which are in force at the time of their examination and/or certification.

1. Graduation from a medical school of the United States or Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association, or graduation from a foreign school considered acceptable by the board.

2. Completion of an internship of not less than one year in a hospital approved by the same Council, or what would constitute in the opinion of the board the equivalent of such training.

3. Two years of postgraduate work in general surgery beyond the intern year, as a resident or an assistant resident in an approved hospital, or a period of training gained elsewhere judged by the board to be the equivalent of such training.

4. Training in general plastic surgery (including maxillofacial surgery) in an acceptable residency [1] or preceptorship for an additional period of not less than two years, also be taken in an approved hospital,[1] or under auspices satisfactory to this board.

5. During these years of training following the internship year, a candidate must hold positions of increasing responsibility for the care and management of patients with surgical conditions. When a candidate receives his training in more than one institution, it is equally imperative that he hold positions of increasing responsibility. He must have sufficient operative experience to acquire surgical skill and judgment through the performance of surgical operations with a high degree of responsibility, but under circumstances providing adequate opportunity for consultation and advice.

6. An additional period of not less than two years of practice in plastic surgery. If a candidate elects to spend one or two additional years in approved training in plastic surgery, one year of such training will be credited toward the required two years of private practice if it can be demonstrated that the candidate held a position of increasing responsibility. It is imperative that one year be in actual private practice in such instances.

The above training may be taken as a resident in an approved hospital, or under a preceptorship offering equivalent training. By the latter statement it is meant that one may secure the necessary and specified training as an assistant to an accredited plastic surgeon providing suitable facilities for the education of the candidate are offered.

Credit for work done in governmental plastic surgery residencies (Army, Navy, VA hospitals) is limited to one year regardless of the time put in by the trainee, and must be supplemented by an additional year of prescribed training in a civilian plastic surgery residency or preceptorship.

The period of special training should emphasize the relation of the basic sciences—anatomy, pathology, physiology, biochemistry, bacteriology—to the application of surgical principles which are fundamental in all branches of surgery, and especially to plastic surgery. In addition, the candidate must understand and be trained in the following subjects: the care of emergencies, shock, hemorrhage, blood replacement, electrolyte and fluid balance, choice of anesthetics, chemotherapy, acidosis and alkalosis, narcotics and hypnotics, wound healing, etc.

Because of vagaries of training, such as changes from one specialty to another, interims of military duty and other service to the country, the aptitude and skill of candidates, the board may, at its discretion, review and make recommendations for or against certification of certain applicants outside of the listed qualifications and requirements.

The board reserves the privilege of requesting lists of operations done solely by the candidate for one or more years, or of requesting special and extra examinations, written or oral and practical, and of requesting any specific data concerning the candidate that may be deemed advisable before making final decision for certification.

Eligibility rulings or an evaluation of a candidate's qualifications or training cannot be made by the secretary or by any one member of the board. Official evaluations of qualifications are made only by the Committee on Credentials and Requirements, or by the entire board where necessary, after a review of the candidate's formal application for such rulings. The applicant must allow at least two months for such requests to make the rounds of the committee.

TRAINING FACILITIES

The American Board of Plastic Surgery, in cooperation with the Council on Medical Education and Hospitals of the A. M. A. and the American College of Surgeons, evaluates training facilities in institutions providing acceptable residencies in plastic surgery. The board does not assume the responsibility for independent inspection and approval of residencies. It will inspect and make recommendations for or against approval of a residency in plastic surgery only after the director of the residency has applied to the Council on Medical Education and Hospitals of the American Medical Association for approval of the residency, and after the Council has notified the board to that effect. Therefore any diplomate of the board wishing approval of a residency under his supervision should apply to the Council for such approval. The board will make its own inspection, preferably at the same time as the A. M. A. Council inspection, and will report its findings to the Council. Upon completion of consideration by the Council and the board, the hospital will be notified by the Council of the joint action which has been taken, and the hospital and the secretary of the board will be notified simultaneously by the Council to avoid any misunderstanding as to the status of the program.

In certain instances the board will accept, in lieu of the required two years' training in an approved residency, training in a preceptorship under a fully qualified plastic surgeon when such preceptorship is properly organized and supervised to give the trainee adequate experience and training in plastic surgery of a well-rounded nature. Certain established preceptorships are given full approval. New preceptorships will be given tentative approval in advance on presentation to the board by the preceptor of a well-rounded plan of training. In such instances the trainee will be required to keep a detailed record of his experience, presenting this report to the board at intervals of six months. The preceptee should request the proper forms for reporting this training from the office of the board. If the preceptorship is found adequate in scope, it will be transferred to the fully approved list. Neither the board nor its individual members can be responsible for the placing of applicants for training. The board will consider those residencies approved by the Council on Medical Education and Hospitals of the A. M. A. as acceptable facilities for training in plastic surgery.

---

[1] An acceptable residency is one that has been approved by the Council on Medical Education and Hospitals of the American Medical Association.

It should be kept in mind by all that the primary interest of the board is to encourage well rounded training in plastic surgery with the aim of producing plastic surgeons capable of doing good work in the wide variety of cases which may come under their care. The standards set up by the board, both for preliminary general surgery and for specialized plastic surgery training, are established in an effort to further this aim. The quality of the training received should be reflected in the candidate's ability to achieve good results in his practice and the examinations of the board are an attempt to judge the ability of the candidate in the specialty of plastic surgery.

SUGGESTIONS FOR TRAINING IN PLASTIC SURGERY

A residency in plastic surgery is one in which a hospital appointment for training in plastic surgery is given the trainee. In a preceptorship in plastic surgery no such appointment is given.

While the board permits flexibility in training, approved residencies and preceptorships should be under fully qualified plastic surgeons. Those trained in preceptorships will be judged by the candidate's ability to make the most of his training and to show adequate ability in all phases of the subject.

There must be teaching in either a residency or a preceptorship—instruction in the basic sciences and in the basic principles of plastic surgery—if not in actual courses, then by conferences, ward rounds, lectures by men on the service or other services, or by visiting doctors.

A resident or assistant resident in plastic surgery should have a full time appointment from an A. M. A. Council-approved hospital or hospitals. A preceptee does not have such an appointment. A residency should preferably be in connection with a teaching hospital having medical school affiliations or be under the Dean's Committee of Veterans Administration hospitals. An acceptable residency is one that is approved by the Council on Medical Education and Hospitals of the American Medical Association.

Before training in plastic surgery is begun, the plastic surgeon in charge of the residency or preceptorship should ascertain that the trainee's preliminary training in general surgery meets the requirements of the board, that is two years of residency training in general surgery after the internship year.

The training in plastic and maxillofacial surgery (at least two years) whether in a residency or a preceptorship, should cover a wide field of plastic surgery, both as to type and anatomic distribution. It should include experience in the treatment of congenital and acquired defects and deformities of the face, neck, body, and extremities, for both functional and esthetic reasons. There should be available sufficient material of a diversified nature so that the trainee will be able to pass the examinations of the board after the period of training and the two additional years of private practice. If the available material on one service is inadequate, the deficiency should be made up by affiliation with another plastic surgeon on another service so that a broad experience will be obtained in plastic surgery. The trainee should be provided an opportunity to operate under the direct supervision of the plastic surgeon in charge, and with increasing ability, to be given an opportunity to operate independently on suitable cases under more remote supervision.

RESIDENCY INFORMATION SERVICE

The Council on Medical Education and Hospitals of the American Medical Association maintains a "Residency Information Service," published quarterly, giving lists of available residency appointments in approved services in the specialties. This bulletin, showing available openings in residency appointments in plastic surgery, and other specialties, may be had on request from the Council.

MILITARY CREDIT

Credit for military service is given on an individual basis, each case being considered on its own merits and the amount of credit allowed is determined by the board when the information is submitted with the application.

MEDICAL OFFICER'S PROFESSIONAL TRAINING RECORD

The Medical Officer's Professional Training Record (DD Form 408) is a record maintained by individual Medical Corps officers for presentation to the various authorized accrediting boards toward certification. This record is presented by the officer to the boards for evaluation of the military experience acquired by Medical Corps officers while serving in the Army Medical Service. This form has been prepared by the Surgeons General of the armed services with the assistance of the Council on Medical Education and Hospitals of the American Medical Association and is distributed by the offices of the Surgeons General to their personnel. It is highly important that prospective applicants obtain a copy of this form and that it be submitted with their credentials for evaluation by the board.

CASE REPORTS

On approval by the board of a candidate's application for certification, each candidate is required to submit to the board 35 or more case reports illustrative of his independent work in the field of general plastic surgery. Case reports must be submitted within one year from the time of such request; otherwise a new application must be filed. These case reports shall conform to conditions which the board may from time to time specify and the case reports must be approved by the board before the candidate is admitted to examination. **Case reports must be received in the Office of the Board by Jan. 1 for those who desire to be considered for the spring (May-June) examinations of the board and by June 1 for the fall (October-November) examinations. There will be no exceptions to these two deadlines.**

The 35 case reports must be of a diversified nature and must be submitted to the office of the board, together with photographs. **To be accepted, case reports must be assembled according to the following instructions.** The group must include a variety of material from the entire body rather than a number of cases of one type, and should carry the candidate's personal deductions, conclusions and comments and should be sufficiently detailed to show if the conclusions drawn indicate a grasp of the subject and if the results justify the procedure.

Each case report should be individually assembled, typed on letter-size paper (8½ by 11 in.), with the candidate's name and the number of the case on each page. Each report should have a cover-sheet with the candidate's name, the number of the case, hospital number, diagnosis and a brief summary of the case. The pages of each report should be stapled together securely and placed in a letter-file folder. Photographs of conditions and drawings of operative technique, illustrative of each case, should be included and securely attached to each case report, with the name of the candidate and the number of the case indicated. Cases should be chosen from the private practice of the candidate or from the hospital or clinic service. The initials, color, age, and occupation of each patient should be stated, as should the name of the hospital where treated and dates of admission, operation and discharge. The important details of family history, if relevant, and of the previous history should be given. The history of the condition for which the patient consulted candidate should be stated clearly and concisely, indicating previous treatment, if any, and the mental, social, or economic factors involved. The physical examination of the patient with special reference to the existing deformities should be carefully described. All laboratory and other special examinations, such as roentgenograms, which were made, should be reported, with a statement of what was determined by them. The indications for operation and for the type of operation employed should be given, and the preliminary treatment and the type of anesthesia used should be stated. A full description of the operative technique with methods of hemostasis, suture, and drainage, if any, and the name of the assistant should be given. The late and early postoperative course and results should be described. Before and after photographs should be submitted, and all photographs should be uniform in size, not less than 3 by 4 in. (Kodachrome transparencies not acceptable), mounted on a sheet 8½ by 11 in. (letter-file folder weight), made by a sharp focus lens from untouched negatives with identical lighting conditions, exposure and developing, not reversed, to show conditions before and after operations with clear detail.

If the case reports, and lists of operation when requested, are approved, the candidate will receive subsequent information regarding taking the examinations. The board at its discretion may request certification of case reports by the hospital where the operations were performed. The following form should accompany the case reports: "I hereby certify that the planning and essential surgical procedures described herein were carried out by me as an independent operator."

Every candidate's final acceptability for examination is based not only on the evaluation of his training qualifications but on his professional ability as a plastic surgeon, his ethical standing in the community, and the strict limitation of his work to plastic surgery.

A candidate should remember that these case reports are documentary evidence of his ability and that the material in them and the manner of presentation are important evidences of his ability.

EXAMINATIONS

The qualifying examinations are divided into two parts, the written examination, and the oral and practical examination.

The examinations are given twice yearly, in the spring and fall. The spring examination is given immediately preceding, during, or following the annual meeting of the American Association of Plastic Surgeons (usually in May), and the fall examination is given immediately preceding, during, or following the annual meeting of the American Society of Plastic and Reconstructive Surgery (usually in October). Candidates are required to go to the designated center for the qualifying examination, which lasts three days. These centers will be the city in which the meetings of these two organizations are held if the proper clinic and hospital facilities are available, otherwise in some nearby city where such material is available. Arrangements for all examinations are made by the Examination Committee.

The written examination will consume all of the first day and half of the second day. The oral and practical examination will consume the afternoon of the second day and all of the third day. The subjects of the written examination are, (1) theory and practice of plastic surgery, (2) applied anatomy, applied physiology, (3) pathology, bacteriology, clinical laboratory methods, (pharmacology), (4) reaction of tissue to injury, surgical accidents, anesthesia.

A general oral examination pertaining to plastic surgery will be given. In the practical part of the examination, the examiners will present a group of patients for examination by the candidates, and the candidates will be quizzed on methods of procedure—diagnosis, treatment, technic, and so on. Slides of preoperative conditions will be shown on a screen and the candidate asked to make a quick diagnosis of the items and tabulate in the order of their importance and methods of treatment. Microscopic slides of the average pathological tissue falling within the province of the plastic surgeon will be given the candidates on which they will be asked to write a description and diagnosis.

Prior to the examination, the candidate will be visited at his place of practice by a member or members of the board to observe him operate and to examine a number of his pre- and postoperative cases.

To be considered as passing, the candidate will be required to receive a grade of at least 65 per cent in each portion of the written examination and an average of 75 per cent on the entire written and oral examination.

REEXAMINATIONS

Candidates who have failed in any portion of the examination may be admitted to another examination after one year, or within three years, except in such cases as the board may for good and sufficient reason deny a candidate the privilege of reexamination. A candidate who fails one reexamination will be admitted for further examination only after submitting evidence of additional study and preparation. The candidate must give 60 days' notice requesting reexamination and pay a fee of $25 for the written examination and $25 for the oral and practical examination. The examiners conducting the first examination will not be eligible to conduct the reexamination.

CERTIFICATION

After a candidate has met the requirements for eligibility and passed the examinations of the board, a certificate attesting his qualifications in plastic surgery will be issued to him by the board, signed by its officers and having the seal of the board affixed thereto. It shall be the prerogative of the board to determine the fitness professionally and ethically of any candidate for its certificate, and the action or decision of the board regarding the certification of any candidate shall be final.

FEES

The fee for application and examination is $150. Of this sum, $25 must accompany the application and the remaining $125 must be paid when the candidate is notified of acceptance for examination. There will be no refunds. This fee may be increased at the discretion of the board. The board is a nonprofit organization and the fees of candidates are used solely for defraying the actual expenses of the board. The members of the board serve without remuneration. Because of the limited number of surgeons certified by this board it is necessary for a limited time to request a voluntary annual prorata contribution from diplomates after the first year's certification to help defray expenses.

AMERICAN BOARD OF PREVENTIVE MEDICINE

Walter L. Bierring, Chairman, Des Moines, Iowa.
Felix J. Underwood, Vice-Chairman in Public Health, Jackson, Miss.
Brig. Gen. Otis O. Benson, Vice-Chairman in Aviation Medicine, Washington, D. C.
Gaylord W. Anderson, Minneapolis.
J. H. Baillie, Toronto, Canada.
Richard F. Boyd, Boston.
Leroy E. Burney, Indianapolis.
Matthew R. Kinde, Battle Creek, Mich.
William P. Shepard, San Francisco.
James S. Simmons, Boston.
Jan H. Tillisch, Rochester, Minn.
V. A. Van Volkenburgh, Albany, N. Y.
Reginald M. Atwater, Alternate, New York.
Ernest L. Stebbins, Secretary-Treasurer, 615 North Wolfe Street, Baltimore.
John C. Hume, Assistant Secretary, Baltimore.

CONSULTANTS

Col. Tom Whayne (Army).
Capt. Otto L. Burton (Navy).
Erwin C. Drescher (Public Health Service).
Col. Fratis L. Duff (Air Force).
Katherine Bain (Children's Bureau).
George R. Callender (Veterans Administration).
Basil MacLean, Rochester, N. Y.

ELIGIBILITY REQUIREMENTS FOR EXAMINATION

GENERAL REQUIREMENTS

1. Good moral character and high ethical and professional standing.

2. Graduation from a medical school in the United States or Canada approved by the Council on Medical Education and Hospitals of the American Medical Association, or from a foreign medical school satisfactory to the board.

3. An internship of at least one year in a hospital approved by the Council on Medical Education and Hospitals of the American Medical Association or in a foreign hospital satisfactory to the board.

4. Licensure to practice medicine in the United States or in the Dominion of Canada.

SPECIAL REQUIREMENTS IN PUBLIC HEALTH

1. Successful completion (after internship) of at least one academic year of graduate study leading to the degree of Master of Public Health or an equivalent degree or diploma; or training or study deemed by the board to be substantially equivalent to such graduate study:

2.* Residency (after internship) of at least two years of field experience in general public health practice, which included planned instruction, observation, and active participation in a comprehensive, organized, public health program, one year of which may be an approved clinical residency in a field directly related to public health;

3. A period (after internship) of not less than three years, in addition to 1 and 2 above, of special training in or teaching or practice of public health; and

4. Limitation of practice to full-time teaching or practice of public health as a specialty.

SPECIAL REQUIREMENTS IN AVIATION MEDICINE

1. Successful completion (after internship) of at least two academic years of graduate study in preventive medicine and aviation medicine, one year of which graduate study shall be in a school of public health accredited for the purpose of such graduate study by the American Public Health Association and one year of which shall be in a school of aviation medicine accredited for the purpose of such graduate study by the Council on Medical Education and Hospitals of the American Medical Association; or training and study deemed by the board to be substantially equivalent to such graduate study;

2. Residency (after internship) of at least two years of supervised experience in aviation medical practice, which included planned instruction, observation, and active participation in a comprehensive, organized program of aviation medicine, one year of which may be an approved clinical residency in a field directly related to aviation medicine.

3. A period (after internship) of not less than two years, in addition to 1 and 2 above, of special training in or teaching or practice of aviation medicine;

4. Limitation of practice to full-time teaching, research, or practice of aviation medicine; and

5. Regular and frequent participation in aerial flight.

Credit for training and experience in public health or aviation medicine while in military service will be considered on an individual basis, depending on the type of service.

APPLICATIONS

Each application for examination must be made on the prescribed form (which may be obtained from the secretary) and be accompanied by the required documentation, and must be filed with the secretary, ordinarily not less than 90 days prior to the date of the examination. The application must be accompanied by an application fee and two recent, clear, unmounted, autographed photographs of the applicant, one of which should be attached to the application and the other unattached.

FEES

The fee for application and examination is $90, payable as indicated below; additional fees are payable for reexamination, as set forth below, but no additional fee is payable for the issuance of a certificate.

Application fee, $15. No application will be considered unless accompanied by the application fee. The application fee is not refundable.

Examination fee, $75. This fee is payable when the candidate is notified of acceptance for examination, and, if paid prior thereto, is not refundable after such notification has been given.

No member of the board is authorized to give informal opinions as to the eligibility of the candidates. The determination of eligibility will be made only by the board after receiving full application information. Each candidate must comply with board regulations in effect at the time the examination is taken, and also those in effect at the time the certificate (if any) is issued, regardless of when the original application was filed. An applicant declared ineligible for admission to examination may refile or reopen his application on the basis of new or additional information within two years of the filing date of his original application without payment of an additional application fee.

Applicants who are declared eligible for examination but who fail to submit to examination within three years of the date of the filing of the application are required to file a new application and to pay a new application fee.

CERTIFICATION IN AVIATION MEDICINE WITHOUT EXAMINATION (THE FOUNDERS GROUP)

The bylaws authorize the board, for a limited period of time, to excuse from examination specialists in aviation medicine who have attained high academic rank or have had a minimum of ten years of distinguished service in the field of aviation medicine and are considered eligible by the board, whether or not they meet the eligibility requirements previously referred to. Applications for consideration as members of the Founders Group must be received not later than July 1, 1954. The application fee must accompany the application, and the examination fee is payable before certification even though the applicant be excused from examination.

EXAMINATIONS

Examinations will be held from time to time and in various places depending upon need as indicated by applications received. Examinations will ordinarily be held in connection with the annual meetings of one or more of the sponsoring societies and may also be held at other times and at other places so located geographically as to minimize travel for the applicants.

The examination consists of three parts:

Part 1 consists of a comprehensive written examination designed to test the knowledge of the applicant in the general field of preventive medicine. Part 2 is a comprehensive written examination designed to test the knowledge of the applicant in the special field in which he requests certification. Part 3 is an oral or practical examination that will usually be held at the completion of the written examinations. An endeavor will be made to adapt the details of the oral or practical examination to each candidate's experience and practice. The examiners will report on each candidate to the assembled board, by which the results of the examination will be considered.

REEXAMINATION

Candidates failing the first examination taken may, upon timely request, be admitted to a second examination within 18 months following the examination failed, upon payment of an additional fee of $15. If the candidate fails the second examination, a period of 11 months must elapse before admission to a third examination. A fee of $25 is required for admission to the third examination. Candidates failing three examinations will not be admitted to any subsequent examinations unless the board so directs.

---

* Approval of Residency training is in the process of development. Until such time as an adequate program of residency is developed, field training will be evaluated by the Board on an individual basis. Information as to approved residencies may be obtained from the Council on Medical Education and Hospitals or from the Secretary of the Board.

CERTIFICATION

On satisfactory completion of the examination and proof to the satisfaction of the board that the applicant is eligible for certification, a certificate will be issued to the effect that the person named has been found to be possessed of special knowledge in the field specified in his application. The certificate will be signed by the officers of the board and will have its seal affixed. Each certificate remains the property of the board, but the person to whom it is issued shall be entitled to its possession unless and until it is revoked. Any certificate issued by the board may be revoked if evidence, satisfactory to the board, is presented that the applicant was not eligible to receive it at the time of examination or issuance, or that he misstated, misrepresented, or concealed any pertinent fact, or that his license to practice medicine has been suspended or revoked, or that he has ceased to be engaged in the teaching or practice of the specialty in which he has been certified. The issuance of a certificate to any person does not constitute such a person a member of the board.

AMERICAN BOARD OF PROCTOLOGY

Walter A. Fansler, President, Minneapolis.
George H. Thiele, Vice-President, Kansas City, Mo.
Garnet W. Ault, Washington, D. C.
Harry E. Bacon, Philadelphia.
A. W. Martin Marino, Brooklyn, N. Y.
Louis E. Moon, Omaha.
Hyrum R. Reichman, Salt Lake City.
Robert J. Rowe, Dallas.
R. A. Scarborough, San Francisco.
Stuart T. Ross, Secretary, 131 Fulton Ave., Hempstead, N. Y.

Associate Members

J. Edwin Alford, Buffalo.
R. J. Jackman, Rochester, Minn.
Jack Kerr, Dallas.

Advisory Council

Curtiss Rosser, Dallas.
Louis J. Hirschman, Traverse City, Mich.
Louis A. Buie, Rochester, Minn.

QUALIFICATIONS OF CANDIDATES

General Qualifications and Requirements.—All candidates shall comply with the current regulations of the board, regardless of the time of filing applications. These are as follows:

1. Candidates shall have limited their practice to proctology, shall appear personally before the board, and shall submit to the required examination.
2. They shall deliver to the board an official record of patients hospitalized by them during the year prior to the date of submission of the application if the board requests it.
3. They shall submit a bibliography of papers and books published.
4. They shall possess moral, ethical, and professional qualifications acceptable to the board.
5. They shall possess full citizenship in the country where they practice (limited to countries of North and South America, their possessions and their territories and the Philippine Islands).

Professional Qualifications.—

1. They shall be graduates of medical schools approved by the Council on Medical Education and Hospitals of the American Medical Association.
2. They shall possess a license to practice medicine in the state, territory, or province of their residence.
3. They shall have completed an internship, preferably of the general rotating type, of not less than 12 months in a hospital approved by the Council on Medical Education and Hospitals of the American Medical Association.
4. They shall be members of the American Medical Association or the corresponding medical association recognized by the board in the country in which they reside.

Special Professional Qualifications.—They shall have completed:

1. Two years of approved general surgical residency and two years of approved proctologic residency; or
2. Three years of approved general surgical residency and two years of approved proctologic precepteeship; or
3. Two years of approved general surgical residency and three years of approved proctologic precepteeship.

APPLICATIONS

Each candidate for examination shall submit an application prepared upon the prescribed form which shall be furnished by the secretary of the board. It shall contain a record of the candidate's premedical and medical training, internships, residencies, precepteeships, other postgraduate study, hospital and dispensary appointments, teaching positions, service in the armed forces, service in federal, state, or local government, membership in medical societies, and any additional information considered valuable by the board. The application shall be endorsed by two proctologists. It shall be accompanied by two unmounted autographed recent photographs of the candidate, letters of endorsement from appropriate sources, and the application fee. It shall be filed with the secretary not less than 90 days prior to the date of examination.

EXAMINATIONS

Examinations are conducted at times and places determined by the board and are announced in The Journal of the American Medical Association. An average of 75% is the passing grade on all examinations. All examination papers are identified only by numbers assigned to candidates, and the examiners do not know the identity of the examinees.

Part 1.—This examination consists of a comprehensive written examination in anatomy, physiology, pathology, bacteriology, biochemistry, and other basic sciences. It is usually held in the spring of the year in several cities of the United States. Candidates who have passed part 1 examinations of the American Board of Surgery or who are diplomates of this board and who have completed required training in proctology may, upon approval of the American Board of Proctology, be excused from taking part 1 of the examinations of the American Board of Proctology.

Part 2.—This examination consists of comprehensive written and oral examinations on the theory and practice of proctology. It includes questions on roentgenologic interpretation and other subjects considered appropriate by the board. Usually this examination is held in the fall of the year in one city of the United States. The oral portion of the examination is conducted by the members of the board or by designated examiners. An attempt is made to ascertain the candidate's knowledge of current proctologic literature, his knowledge of the basic sciences, the extent of his clinical experience, and other qualifications.

Part 3.—This examination is held in the community in which the candidate conducts his professional activities. It may be omitted at the discretion of the board. Candidates required to take part 3 are notified by the secretary and arrangements for the examination are made that are suitable to the candidate and the examiner. The examination shall involve: (1) surgical operations, (2) hospital rounds, (3) hospital and office records, and (4) office practice.

REEXAMINATIONS

A candidate who fails in part 1 or part 2 may be reexamined after one year has elapsed. The act of filing an application for reexamination is the candidate's responsibility. Candidates who have failed a reexamination may petition the board for another examination. With this petition, acceptable evidence of additional preparation shall be submitted. Diplomates of the board who shall have neglected to maintain a degree of satisfactory competence in the practice of proctology, as determined by the board, may be requested to submit to reexamination.

FEES AND DUES

Fees.—Application fee. A fee of $25 shall accompany the application.

Examination fee. A fee of $150 is due and payable when the candidate is notified that he has been approved to take part 1 or part 2 examinations.

Reexamination fee. A fee of $50 is due and payable when the candidate is notified that he has been approved for reexamination in either part 1 or part 2 examination.

Reexamination in Part 3.—Candidates for reexamination in part 3 may be held responsible for payment of expenses incurred by the board in conducting the reexamination. No fee shall be returned to the candidate without board approval. All fees shall be made payable to the American Board of Proctology and shall be sent to the secretary.

Dues.—Each diplomate is required to pay a fee of $10 to the board annually for a period of 10 years following certification.

Fees and dues are utilized to defray expenses incurred by board activities.

The foregoing statement, authorized by the secretary of the American Board of Proctology, should be considered unofficial pending further action by the board.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY

KENNETH E. APPEL, President, Philadelphia.
FREDERICK P. MOERSCH, Vice-President, Rochester, Minn.
HENRY W. BROSIN, Pittsburgh.
BERNARD J. ALPERS, Philadelphia.
RUSSELL N. DEJONG, Ann Arbor, Mich.
KNOX H. FINLEY, San Francisco.
FRANCIS M. FORSTER, Washington, D. C.
FRANCIS J. GERTY, Chicago.
WILLIAM MALAMUD, Boston.
GEORGE N. RAINES, Portsmouth, Va.
PAUL I. YAKOVLEV, Boston.
DAVID A. BOYD JR., Secretary-Treasurer, 102-110 Second Ave., S.W., Rochester, Minn.

APPLICATION FOR CERTIFICATES

An application, in order to be considered at any meeting of the board, must be in the hands of the secretary of the board not less than 90 days before the date of such meeting. A proper application form may be obtained from the secretary. Application may be made for certification in psychiatry or in neurology or in both fields. Applications will be formally considered only when made on the official application blank in such form as may be adopted from time to time by the board and when accompanied by an application fee in such amount as may be fixed by the board.

The secretary of the board, on receipt of an application, shall forthwith make inquiries from those to whom the candidate refers and from such other persons as the secretary may deem desirable and shall verify the candidate's record from the biographical records of the American Medical Association, after which he shall forward the application to the Committee on Credentials. This committee shall consider the application and other information available and notify the secretary whether the application is accepted. The certification of a candidate in either psychiatry or neurology, or both, shall be approved by a majority of the members of the entire board at any meeting held for such certification.

FORM OF CERTIFICATION

There shall be separate certification in psychiatry and in neurology and two certifications or a combined certification for those qualified in both fields. The certifications shall be in such form as is approved by the Board of Directors.

GENERAL REQUIREMENTS FOR APPLICANTS

Each applicant for a certificate must establish that:

(*a*) He is a physician duly licensed by law to practice medicine.

(*b*) He is of acceptable ethical and professional standing.

(*c*) He is now a member of the American Medical Association or a member of such medical societies as are recognized for purposes of certification by the Council on Medical Education and Hospitals of the American Medical Association. Exceptions to the foregoing may be made at the discretion of the board for good and sufficient reasons.

(*d*) He has received adequate training in psychiatry or neurology, or both, as a specialty.

CLASSES OF APPLICANTS

Class A.—Applicants who graduated from an approved medical school before the foundation of the board (1934) will not be held to the strict interpretation of the published requirements in formal graduate training. Under such circumstances the board will consider the training and experience of the applicant and decide whether or not he will be admitted to the examinations. After Jan. 1, 1954, for such graduates the board will consider 10 years of full-time acceptable experience in psychiatry or neurology in lieu of the formal training requirements. Should the candidate then apply for supplementary certification, the Credentials Committee will require five years of additional acceptable experience in the supplementary field.

Class B.—Applicants who graduated from an approved medical school after 1934 shall fulfil the following requirements.

PROFESSIONAL EDUCATION

1. Graduation from a medical school in the United States or Canada approved by the Council on Medical Education and Hospitals of the American Medical Association. In the case of an applicant whose medical training has been received outside the United States and Canada, such training must be satisfactory to the aforementioned Council.

2. Completion of a year's internship approved by the same Council in general medicine, general surgery, pediatrics, or a rotating service.

3. The nine month wartime internships will be accepted as an equivalent of one year.

SPECIALIZED TRAINING

Admission to the examination for certification in psychiatry or in neurology requires a total of five calendar years of training and experience, three years of which must be specialized training obtained in approved training centers, plus two years of experience. Admission to the examination for certification in both psychiatry and neurology requires a total of six calendar years of training and experience, five years of which must be specialized training obtained in approved training centers, plus one year of experience. The specialized training may be subdivided into two and one-half years each in psychiatry and neurology or three years in one subject and two years in the other. The required years of experience should be spent in clinical practice with major responsibility for the care of patients.

This training for psychiatrists should include clinical work with psychoneurotic and psychotic patients, combined with the study of basic psychiatric sciences, medical and social psychology, psychopathology, psychotherapy and the physiological therapies, including a basic knowledge of the form, function and pertinent pathology of the nervous system. This training should be supervised and guided by teachers competent to develop skill and understanding in the utilization of such basic knowledge in dealing with patients. Mere factual knowledge is not sufficient. This training period should include instruction in the psychiatric aspects of general medical and surgical conditions and the behavior disorders of children and adolescents sufficient to develop practical ability to direct the treatment of such conditions. It should also include collaborative work with social workers, clinical psychologists, courts, and other social agencies. The training program of the candidate for certification in psychiatry should include sufficient training in neurology to enable him to recognize and to evaluate the evidences of organic neurological disease.

The training for neurologists should be based on clinical work with adults and children with neurological disorders, including the neurological complications of medical and surgical conditions. This should be combined with study of basic neurological sciences, neuroanatomy, neurophysiology, neuropathology, and neuroroentgenology. This training should be supervised and guided by teachers competent to develop skill and understanding in the utilization of such basic knowledge in dealing with patients. Mere factual knowledge is not sufficient. This training should include sufficient training in psychiatry to enable the candidate to recognize and to evaluate the common psychiatric reactions.

The board offers the foregoing two paragraphs as an outline of desirable training. If, however, the candidate has evidence of equivalent qualifications of training and experience not in the pattern here formulated, this evidence with appropriate documentary support may be included in his application for evaluation and possible approval by the board.

Candidates seeking certification in both neurology and psychiatry or supplementary certification in one after being certified in the other must submit evidence satisfactory to the board of an additional two years of full-time basic training in the supplementary specialty.

Thus, no candidate is eligible for examination by the board until he has completed at least five years of special training and experience in neurology or psychiatry for a single certificate, or at least six years of special training and experience in neurology and psychiatry for certification in both neurology and psychiatry.

The board will give not more than six months of credit for not less than six months of training in an approved training center for internal medicine or pediatrics in lieu of six months of experience to candidates for the certificate in psychiatry or neurology, but not to candidates for certification in both psychiatry and neurology.

The board will give credit for one year of training in child psychiatry providing it is the third year of the required three years of special training required by the board and providing it is taken in a center approved by this board for training in child psychiatry. After July 1, 1956, training credit for work in the field of child psychiatry may be gained only by participation in a hospital residency training program that is regularly approved. After that date, all independent training approval of psychiatric clinics for children is discontinued.

The list of training programs approved by this board and by the Council on Medical Education and Hospitals of the American Medical Association may be found in the current issue of the Internship and Residency Number of THE JOURNAL.

TRAINING IN THE ARMED FORCES

Credit will be granted for one year of wartime military service in the Army, Navy, Public Health Service, and Veterans Administration. Wartime to this board means Dec. 7, 1941, to Feb. 15, 1946. Further credit for specialized training will be granted only if the candidate has received training in an institution recognized by the Council on Medical Education and Hospitals of the American Medical Association and approved by this board. Time beyond one year spent in the above government agencies may be credited to experience providing the candidate has been regularly assigned to a service in neurology or psychiatry.

Training and experience credit toward requirements for examination will be granted for military duty in present emergency under certain conditions. This policy relates to active military medical duty since July 1, 1950. One year of training credit will be granted for one year spent in full-time psychiatric and/or neurological duties. Additional training credit will be granted for that amount of time spent in approved training programs. Experience credit will be granted for any remaining time spent in full-time psychiatric and/or neurological assignments. Double credit will not be granted for any single period of time. For military duty after Jan. 1, 1954, only experience credit will be granted for full-time psychiatric and/or neurological duties. Training credit will be granted for residency assignments in regularly approved training programs.

EXAMINATIONS

Dates and places of examinations are set by the board at its discretion and shall be announced in THE JOURNAL, in the *American Journal of Psychiatry*, in the *Journal of Nervous and Mental Diseases*, and in the *Archives of Neurology and Psychiatry*.

Though the purpose of the examination is to test the competence of the candidate in psychiatry or neurology or both, it must not be forgotten that both these medical disciplines constitute part of the broad field of general medicine. The board requires some proficiency in neurology on the part of those it certifies in psychiatry, and vice versa, but examines the candidate in accordance with the certificate he seeks. The examinations will be of such type that no adequately trained person will fail and yet they will be sufficiently searching so that the specialist in fact may be separated from the specialist in name. The practical examination will include the examination of patients under the supervision of the examiner. The manner of examining patients, and the reasoning and deductions therefrom, will constitute an important part of the examination. Oral and practical examinations will be given in the basic sciences with special regard to their clinical implications. Written examinations may be given at the discretion of the board. The examination for certification in psychiatry will differ from the examination for certification in neurology.

PAYMENT OF FEES

The candidate on filing his application shall accompany it with an application fee of $35 which is not returnable. If a preliminary written examination has been decreed, an additional $25 fee will be required at the time of the applicant's acceptance. When notified by the secretary that he is eligible for the oral and practical examination, the candidate shall send to the secretary an examination fee of $65. A candidate who has been certified in either psychiatry or neurology and who has been admitted to supplementary examination for the other certificate shall pay an additional examination fee of $65.

A candidate who has failed in one examination is eligible for reexamination within one year on payment of a reexamination fee of $50. After the year has elapsed he must submit a new application and pay new application and examination fees. If he fails the reexamination, he may, after two years have elapsed, submit a new application and $35 fee, present evidence of further training and pay an examination fee of $65.

A candidate who fails in one or two subjects is eligible for reexamination in those subjects within one year on payment of a reexamination fee of $50. After the year has elapsed he must submit a new application and pay new application and examination fees and repeat the entire examination. If he fails the reexamination, he may apply again for the complete examination after two years on submission of evidence of further training and on payment of an application fee of $35. If admitted to the examination, he must pay a new examination fee of $65.

Any candidate who finds himself unable to attend an examination to which he has been admitted and does not notify the secretary at least six weeks before the date of the examination will forfeit half of his examination fee. Any candidate who fails to appear for examination within a period of three years following the date of notification of eligibility for examination shall be required to submit a new application and pay the attendant fee. If a candidate dies before his certificate is issued, all fees will be returned to his estate.

AMERICAN BOARD OF RADIOLOGY

H. Dabney Kerr, President, Iowa City.
D. S. Childs, Vice-President, Syracuse, N. Y.
Ralph S. Bromer, Bryn Mawr, Pa.
John D. Camp, Los Angeles.
A. H. Dowdy, Los Angeles.
Ross Golden, New York.
E. L. Jenkinson, Chicago.
I. H. Lockwood, Kansas City, Mo.
F. W. O'Brien, Boston.
J. W. Pierson, Baltimore.
U. V. Portmann, Cleveland.
Douglas Quick, New York.
Leo G. Rigler, Minneapolis.
B. P. Widmann, Philadelphia.
B. R. Kirklin, Secretary-Treasurer, 102-110 Second Avenue, S.W., Rochester, Minn.

CERTIFICATES

A certificate will be issued to each candidate who meets the requirements of the board, to the effect that the holder of the certificate has had adequate training in radiology and has successfully fulfilled the requirements of the board.

A certificate granted by this board does not of itself confer, or purport to confer, any degree, or legal qualifications, privileges or license to practice radiology. Certificates of the board shall be issued on one of four forms:

1. A certificate to the effect that the applicant has been found qualified to practice radiology in all of its branches.

2. A certificate to the effect that the applicant has been found qualified to practice radiology in one or more of the following special fields: (*a*) roentgenology; (*b*) diagnostic roentgenology; (*c*) therapeutic radiology.

3. A certificate to the effect that the applicant has been found qualified to practice radiological physics in all of its branches.

4. A certificate to the effect that the applicant has been found qualified to practice radiological physics in one or more of the following special fields: (*a*) x-ray and radium physics; (*b*) medical nuclear physics.

DEFINITIONS

For the purposes of this board, the following definitions are adopted:

1. Radiology is that branch of medicine which deals with the diagnostic and therapeutic application of radiant energy including roentgen rays and radium.

2. Roentgenology is that branch of radiology which deals with diagnostic and therapeutic application of roentgen rays.

3. Diagnostic roentgenology is that branch of radiology which deals with the diagnostic application of roentgen rays.

4. Therapeutic radiology is that branch of radiology which deals with the therapeutic application of roentgen rays, radium, and radioactive isotopes.

5. Radiological physics is that branch of physics which deals with the medical application of roentgen rays and the radiations from radioisotopes, nuclear reactions and particle accelerators.

6. X-ray and radium physics is that branch of radiological physics which deals with roentgen rays and radium.

7. Medical nuclear physics is that branch of radiological physics which deals with radioisotopes, nuclear reactions, and particle accelerators.

GENERAL REQUIREMENTS

Each applicant for admission to the examination for a certificate in radiology shall be required to present evidence that he has met the following standards:

GENERAL QUALIFICATIONS

1. Satisfactory moral and ethical standing in the profession.

2. A license to practice medicine in the state or county in which he resides.

3. That the applicant holds himself out to be a specialist in radiology or one of its branches as defined under "definitions," and that he devotes his time primarily and principally (at least 75 per cent) to the practice of radiology or one of its branches.

4. That he is a citizen of the United States or Canada. Candidates from other countries must be permanent residents of that country and native citizens thereof.

GENERAL PROFESSIONAL EDUCATION

1. Graduation from a medical school recognized by the Council on Medical Education and Hospitals of the American Medical Association.

2. Completion of an internship of not less than one year in a hospital approved by the same Council.

SPECIAL TRAINING

1. After completion of the internship there shall be a period of special training in radiology of not less than three years in clinics, hospitals or dispensaries recognized and approved by the American Board of Radiology and the Council on Medical Education and Hospitals of the American Medical Association as competent to provide a satisfactory training in radiology. This period of specialized training shall include:

(*a*) Graduate training in pathology, radiation physics, and radiobiology. A period of six months full-time training in pathological anatomy is recommended but where this is not possible to arrange, the student during his three-year training period, may, by attending pathological conferences, postmortem examinations and studying removed tissues, receive adequate training in pathology. It is recommended that radiation physics be taught by a combination of didactic lectures, practical examples, and direct clinical demonstrations.

(*b*) An active experience (residency) of not less than 30 months in an institution, the radiological department of which is recognized and approved by the American Board of Radiology and the Council on Medical Education and Hospitals of the American Medical Association as capable of providing satisfactory training.

(*c*) Examination in the basic sciences of radiology as well as the clinical aspects thereof. These examinations should be given by the student's instructors in order to allow those responsible for his training to certify to the board that he is adequately prepared.

APPLICATIONS

The board desires to appraise the candidate's educational opportunities (premedical, medical, and radiological), the ability of his instructors, his hospital and teaching positions, his original investigations, his contributions to radiologic literature, his membership in medical societies, and his local and general reputation.

For this purpose, application must be made on a special blank which may be obtained from the secretary. No application will be considered unless made on the regular application blank. This application shall be forwarded with the required data, two unmounted photographs and the fee of $100 at least six months before the date of the examination.

FEE

A fee of $100 must accompany each application blank. This fee will not be returned, and no application will be considered until the fee is received. This fee has been carefully computed and is used entirely for administrative purposes. As the number of candidates decreases, it may become necessary to raise the fee.

EXAMINATIONS

Each year the board will hold two examinations. The first will be in the spring and the second examination will be held in conjunction with the annual meeting of the American Roentgen Ray Society or the Radiological Society of North America.

For the present, examinations consist of practical and oral examinations, although written examinations may be added later. The examinations are designed to test the candidate's fitness to practice radiology or one of its branches as a specialty. The board will endeavor to adapt this examination to the candidate's experience and years of practice. It will try especially to ascertain the breadth of his clinical experience, his knowledge of the basic sciences of radiology, and likewise his knowledge of the recent literature on radiology, and his general qualifications as a specialist in this branch of medicine.

The examination consists of tests in film interpretation and an oral examination in pathology, physiology, radiophysics, and radiobiology, as well as the clinical application of roentgen rays, radium, and radioactive isotopes. The applicant is also examined in "professional adaptability," in an attempt to ascertain his attitude toward his fellow practitioners and his patients.

Whenever an applicant fails to pass the examination, the board, if requested, will make suggestions as to suitable courses of instruction for the purpose of overcoming his deficiencies.

REEXAMINATIONS

If the candidate fails in the first examination he will be admitted to a second examination after one year has elapsed but not more than three years. He must give 90 days' notice of his intention to appear for reexamination and pay an additional fee of $50. If a candidate who has failed does not appear for reexamination before the expiration of three years, he will be required to make a new application and pay an additional fee of $100.

A candidate having failed twice may, after one year has elapsed, file a new application, which must be accompanied by the fee of $100.

AMERICAN BOARD OF SURGERY

Thomas H. Lanman, Chairman, Boston.
John H. Mulholland, Vice-Chairman, New York.
William A. Altemeier, Cincinnati.
Lawrence Chaffin, Los Angeles.
Clarence E. Gardner Jr., Durham, N. C.
John H. Gibbon Jr., Philadelphia.
Frank Glenn, New York.
Peter Heinbecker, St. Louis.
Gustaf E. Lindskog, New Haven, Conn.
William K. Livingston, Portland, Ore.
Walter G. Maddock, Chicago.
Carleton Mathewson Jr., San Francisco.
Leland S. McKittrick, Boston.
James D. Rives, New Orleans.
John D. Stewart, Buffalo.
John M. Waugh, Rochester, Minn.
John B. Flick, Secretary and Treasurer, 225 S. Fifteenth Street, Philadelphia, 2.
Cletus W. Schwegman, Assistant to the Secretary, Philadelphia.

REQUIREMENTS

GENERAL QUALIFICATIONS.

1. Moral and ethical standing in the profession and in the community must be satisfactory to the board.

The board, believing that the practice of "fee splitting" is pernicious, leading as it does to a traffic in human life, will reserve the right to inquire particularly into any candidate's practice in regard to this question.

2. Certification is restricted to those whose activities are limited to the practice of surgery, including diagnosis, preoperative and postoperative care.

PRELIMINARY TRAINING

1. Graduation from a medical school of the United States or Canada accredited by the Council on Medical Education and Hospitals of the American Medical Association, or graduation from a foreign school considered acceptable to the board.

2. Completion of an internship (straight, mixed, or rotating) of not less than one year in a hospital approved by the same Council, or its equivalent in the opinion of the board, such as a year of study devoted to a single branch of medicine.

SPECIAL TRAINING

INTRODUCTION

It is not and never has been the policy of the American Board of Surgery to require that a candidate perform a specific number of operations before taking its examination. The only two components of a residency which can be measured are the number of operations performed and the duration of the training period; the more significant and intangible factors are difficult to evaluate. These include:

1. The professional competence and the integrity of the senior staff and their ability and willingness to teach.
2. The responsibility given the resident.
3. The attitude of inquiry pervading the service.
4. The opportunity afforded the resident for study, investigation, and teaching.

Adequate operative experience is concerned more with the variety and magnitude of operations performed than with actual numbers. In certain instances the board may require a special operative inspection.

The board interprets the term "general surgery" in a comprehensive manner and expects candidates to have knowledge of the basic principles applied in the treatment of fractures, trauma and head injuries. Knowledge of the more common procedures in plastic, gynecologic, orthopedic, and urologic surgery is expected. Some elasticity of the program will be allowed to permit persons with preferences for work in specialized fields, experimental surgery or research. In such a program the integration of basic sciences, particularly pathology, with clinical training and material is superior to formal courses.

The most important single factor in the development of a surgeon is the opportunity under guidance and supervision to grow by progressive and succeeding assignments to the stature of complete responsibility.

GROUPS I AND II

The requirements of the board to become eligible for its examinations may be fulfilled by either of the two programs outlined below. Both of these educational programs are considered by the board to be minimal in attaining its purposes.

Group I—A candidate must have completed a four-year graded residency or clinical fellowship in surgery in an institution or institutions acceptable to the board and conference committee. Three of the four years must be spent in general surgery. One of the four years may be spent in any manner which an acceptable program provides.

Group II—As yet there is not a sufficient number of hospitals capable of offering a four-year graded residency in surgery. The board, therefore, will continue to recognize three years of approved residency or fellowship training in a hospital approved by the conference committee. The two additional years over and above this to complete a total of five may be spent in practice limited to surgery carried out under acceptable supervision. One of these two years may be spent in the study of the basic sciences in a fully approved graduate school of medicine.

NOTE: In both Group I and Group II, the supervising surgeon must vouch for the candidate's integrity, surgical judgment and technical skill. Sufficient operative work performed independently under supervision to fortify residency training must be attested to by a statement submitted to the board at the time the candidate makes application.

BASIC SCIENCES

The board does not insist that any special length of time be spent in the basic sciences, but knowledge of these sciences as applied to clinical surgery will be required in the examinations. The board will grant credit for postgraduate work in basic sciences (full time) provided that such study extends over a period of not less than six months.

MILITARY CREDIT

If a candidate has served in a government hospital or hospitals fully approved for residency training, such training will be acceptable to the board. Military credit may be extended to those candidates who have served in non-approved hospitals provided that the candidate has had a satisfactory surgical assignment with adequate and diversified clinical material and provided further that his work in surgery is carried out under the supervision of a surgeon acceptable to the board. Any credit extended in the latter category will be considered preceptorship credit and not residency credit.

REQUIREMENTS FOR FOREIGN BORN AND FOREIGN TRAINED APPLICANTS

Full citizenship status is required of residents of the United States. United States citizens who are residents of other countries, and citizens of other countries must have completed at least the three year residency training requirements in a hospital in the United States or Canada. In addition, they are required to hold a license to practice surgery in the country in which they hold citizenship. The Examination Committee may, in individual instances, accept foreign training as the equivalent of acceptable residency training in the United States.

APPLICATIONS

Prospective candidates for examination by the board should carefully read the board's requirements as set forth in its Booklet of Information. If, after becoming familiar with the board's requirements, the candidate needs advice as to his training, such may be had by writing to the board's office. When a candidate's training seems to meet the board's requirements, an application blank will be mailed. The processing of the completed application requires a minimum of three months by the board's office. The candidate will then be notified by the secretary as to his acceptability for examination, his deferment, or his ineligibility.

The eligibility of candidates whose training in some respects does not conform to requirements published above will require the action of the Examination Committee of the board which may postpone the candidate's notification of acceptability. Every candidate's final acceptability for examination is based not only on the evaluation of his training qualifications, but on recommendation by the board's advisors as to his professional ability as a surgeon, his ethical standing in the community, and the strict limitation of his work to surgery.

THE FOUNDERS GROUP

The Founders Group, to which were admitted those who had already amply demonstrated their fitness as trained specialists in surgery, was closed in January, 1940.

EXAMINATIONS

The qualifying examination will be divided into Part I (written) and Part II (clinical, bedside, and laboratory). In both of these parts, as previously stated, a knowledge of the practical application of the sciences fundamental to surgery will be required.

Part I

This examination will be given simultaneously in as many centers throughout the country as the board may determine suitable for the purpose, and is held twice a year—in the spring and fall. All applications must be on file in the board's office at least three months in advance of the examination. Candidates who are declared eligible are given ample notice as to the center to which they have been assigned for examination.

The examination in Part I is of the objective, multiple-choice type, and is three hours in length, covering a half-day session. These examinations are designed to cover general surgical problems including the application of the basic sciences of surgery to these problems. Questions will be of various types, and will include case histories, questions which will indicate ability in judging cause and effect, and questions illustrating comparisons and relationships. The tests are written by members of the board with the aid of test specialists of the Educational Testing Service.

Part II

The board may, at its discretion, require that a satisfactory operative report be filed before a candidate is eligible for Part II. Such a report shall be made by a member of the board, Founders Group, or one certified by examination, designated to be present during a major operative procedure performed by the candidate.

Part II of the examination shall be oral and practical and cover a one day period, the schedule being arranged somewhat as follows:

8:15 A. M.—Registration.

9 A. M. to 1 P. M.—Clinical surgery (diagnosis, management and the application of physiology, biochemistry, and bacteriology, as the case being examined upon may offer an opportunity for doing so. Roentgenographic interpretation will also be included).

2 to 5 P. M.—Applied anatomy and surgical pathology.

The board expects that every candidate shall be well prepared in applied anatomy and in surgical pathology. In the latter subject more stress is laid on an understanding of disease processes and their clinical implications than on the recognition of gross and microscopic lesions.

Examinations in Part II are conducted in certain centers of the country selected by the board. It is the board's desire to arrange these centers so as to geographically meet the needs of the candidates, on condition that suitable examintion facilities can be provided. Examinations in Part II are conducted by members of the board together with selected diplomates of the board.

GRADES

A candidate must receive an average of 75 per cent for each part to be entitled to the board's certificate.

REEXAMINATIONS

Part I. Candidates who fail Part I are required to wait one year before becoming eligible for reexamination.

Part II. Candidates who fail Part II in its entirety and those who fail in the single subject of clinical surgery are required to wait one year before establishing eligibility for reexamination. Those who fail either anatomy or pathology are required to wait six months. The board expects that during this period the candidate will make a reasonable effort to prepare himself in the subject or subjects in which he has failed.

Should a candidate fail a reexamination in Part I or Part II, further examination privileges will be denied. Appeal for further examination under special circumstances, when satisfactory evidence of further training has been submitted, will be considered by the Examination Committee. The board may, however, for good and sufficient reason, deny a candidate the privilege of further reexamination.

FEES

The fee for the examination is $150, payable as follows: $25 registration fee, $50 for Part I, and $75 for Part II.

Candidates shall be required to pay a fee of $30 for reexamination in Part I and $60 for reexamination in Part II.

This board is a nonprofit organization. All fees will be used, after a reasonable amount is set aside for necessary expenses, to aid in improving existing opportunities for the training of the surgeon. *The members of the board serve without remuneration.*

CERTIFICATE

After meeting the requirements for eligibility and passing the examinations, a certificate attesting to a candidate's qualifications in surgery will be issued by the board, signed by its officers.

The board has discharged its responsibilities by conducting examinations and has issued certificates of qualification to those surgeons who have met certain clearly specified educational requirements and have successfully passed its examinations. In discharging its responsibilities, the primary purpose of the board has been to establish and maintain desirable standards in the education and training of the young surgeon.

The American Board of Surgery has never been concerned with measures that might gain special privileges or recognition for its diplomates in the practice of surgery. *It is neither the intent nor has it been the purpose of the board to define requirements for membership on the staffs of hospitals.* The prime object of the board is to pass judgment on the education and training of broadly competent and responsible surgeons, not who shall or shall not perform surgical operations. The board specifically disclaims interest in or recognition of differential emoluments that may be based on certification.

BOARD OF THORACIC SURGERY

(An Affiliate of the American Board of Surgery)

Cameron Haight, Chairman, Ann Arbor, Mich.
Richard H. Sweet, Vice-Chairman, Boston.
William E. Adams, Chicago.
Thomas H. Burford, St. Louis.
Michael E. DeBakey, Houston, Texas.
Joseph W. Gale, Madison, Wis.
George H. Humphreys, New York.
Julian Johnson, Philadelphia.
John C. Jones, Los Angeles.
Paul C. Samson, Oakland, Calif.
William M. Tuttle, Secretary-Treasurer, 1151 Taylor Ave., Detroit 2.

FUNCTIONS OF THE BOARD

1. To select Founder Members. For this group surgeons of the United States and Canada were chosen who had made meritorious contributions to thoracic surgery.

The Founders Group was kept open for two years after organization of the board.

It was officially closed April 14, 1951.

2. To conduct examinations of satisfactory candidates who seek certification by the board.

3. To improve the opportunities for the training of thoracic surgeons.

4. To set up principles of education to guide young surgeons who desire to prepare themselves for proficiency in thoracic surgery.

5. To issue certificates of qualification to all those meeting the board's requirements.

REQUIREMENTS

1. Certification by the American Board of Surgery.

2. Two years' training in thoracic surgery approved by the Board of Thoracic Surgery, or meritorious contributions to thoracic surgery. One of these two years may be spent during the four years of training in surgery required by the American Board of Surgery.

3. Written, oral, and practical examination.

DEFINITION OF WHAT IS CONSIDERED ACCEPTABLE TRAINING IN THORACIC SURGERY

To qualify for the examination in thoracic surgery, the candidate shall have had two years of training in an active, well-integrated thoracic surgical clinic or clinics, or the equivalent amount of thoracic surgical training, on a mixed service consisting of thoracic and nonthoracic surgical cases. Adequate training in both the tuberculous and nontuberculous aspects of thoracic surgery is expected. In order to obtain this objective, combined residencies between institutions of different types may be advantageous. It is also required that the candidate be familiar with the basic sciences as related to thoracic surgery. Under exceptional circumstances certain surgeons may, by virtue of recognized proficiency in the surgical treatment of thoracic diseases, qualify for the examination at the discretion of the board.

APPLICATIONS

Prospective candidates desiring to apply for examination should consider whether they are able to meet the minimum requirements of the board. They should then submit a letter to the secretary's office, outlining briefly their training and experience in thoracic surgery and ask for an application form. An application form will not be sent unless evidence is submitted in a letter indicating that the prospective applicant appears to meet the minimum requirements.

EXAMINATIONS

The qualifying examinations are divided into two parts. Part 1 is written, and Part 2 is an oral examination in clinical surgery, roentgenogram interpretation, and pathology.

Part 1.—This examination will be given simultaneously at least once a year in as many centers throughout the country as the board may determine suitable for this purpose.

Part 2.—In order to be eligible for part 2 a candidate must have successfully completed part 1. Examinations in part 2 are conducted in certain centers of the country selected by the board.

REEXAMINATIONS

Those persons who fail part 1 or part 2 will be required to wait one year before they can retake the part which they failed. Those who fail twice will be required to wait for a period of two years. Candidates who are unsuccessful at three attempts will be required to wait three years before requesting reconsideration. The board may at its discretion deny the candidates the privilege of reexamination.

Candidates declared eligible but who fail to exercise the examination privilege within three years of the date of filing the application will be required to file a new and current application and pay a new examination fee. Also a candidate who has failed in an examination (part 1 or part 2) and who does not apply for reexamination within three years shall be required to make a new application and pay a new examination fee.

FEES

For the special examination in thoracic surgery and the issuing of a certificate, the fee will be $100. Fifteen dollars of this fee is to accompany the application and will be considered as a registration fee. It is nonreturnable to the applicant in case he is disapproved for examination.

The fee for reexamination will be $50.

AMERICAN BOARD OF UROLOGY

Edgar Burns, President, New Orleans.
A. I. Dodson, Vice-President, Richmond, Va.
Grayson Carroll, St. Louis.
Thomas D. Moore, Memphis, Tenn.
Rubin Flocks, Iowa City.
William N. Wishard, Indianapolis.
Donald A. Charnock, Los Angeles.
Wm. P. Herbst, Washington, D. C.
Harry Culver, Secretary-Treasurer, Chicago.
Mrs. Ruby L. Griggs, Assistant Secretary, Minneapolis.
Office of the Secretary-Treasurer: 30 Westwood Road, Minneapolis 16.

EMERITUS MEMBERS

William F. Braasch, Rochester, Minn.
T. Leon Howard, Denver.
Clarence G. Bandler, New York.
George Gilbert Smith, Brookline, Mass.
Charles C. Higgins, Cleveland.
Roger Graves, Boston.
Gilbert J. Thomas, Santa Monica, Calif.
George F. Cahill, New York.

APPLICATION BLANK; REQUIREMENTS FOR ALL APPLICANTS

Application for certification must be made on a special form. This will be provided by the secretary and must be returned to him accompanied by other required data and credentials, and by $50 of the examination fee.

Requirements for Applicants.—Each applicant, before he shall become eligible to take the examination for certification in urology, must:

A. Have graduated from a medical school of the United States or Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association and must have completed an internship of not less than one year in a hospital approved by the same council. (The former requirement is not applicable to a candidate who graduated from an institution now extinct, or whose graduation occurred before the American Medical Association had prepared a list of accredited medical schools.) All graduates of foreign medical schools must obtain a license to practice in the state or province in which they reside, the certificate of the National Board of Medical Examiners and/or the certificate of graduation from a medical school recognized by the Council on Medical Education and Hospitals of the American Medical Association as capable of providing training comparable with that recognized in a "Class A" medical school.

B. Establish in a manner satisfactory to this board that he is a physician duly licensed by law to practice medicine, that he is of high ethical and professional standing, and that he has received adequate special training in urology.

The board is attempting to increase and to standardize the facilities for urologic training in teaching institutions, so that the expression "special training in urology" may be interpreted to include:

1. A period of study, after the internship, of not less than three years in clinics, dispensaries, hospitals, or laboratories recognized by the Council on Medical Education and Hospitals of the American Medical Association as competent to provide a satisfactory training in the special field of urology.

The training requirements after the internship may be fulfilled in one of the following ways:

(*a*) A three-year residency in urology.

When a resident obtains a senior rating or is in his final year of training, he should be in charge of the examination and treatment (surgical or otherwise), of an ample number of patients under the supervision of the senior consultant or attending urologist who must be a certificatee of the American Board of Urology.

(*b*) A second year of rotating internship or a one-year residency, preferably in general surgery, followed by a two year urologic residency, which should have the same status as the last two years of a three year urologic residency.

(*c*) Preceptorship.

This type of training may be accepted, but it is not encouraged. This, and other variations from training described above, must be supported by evidence that the candidate has had training comparable with one of the two preceding types of residencies.

2. An additional period of not less than two years in the practice of urology in the city from which he makes application.

These special requirements conform with the suggestions made by the Council on Medical Education and Hospitals of the American Medical Association.

After June 30, 1955, training requirements, after the internship, may be fulfilled in one of the following ways:

1. One year general surgery. Three years formal training in urology.

2. Two years of general surgery. Two years formal training in urology.

3. One year of general surgery. One year review of basic sciences or some special research. Two years of formal training in urology.

4. One year general surgery. Two years of formal training in urology. One year of credit for two years in a preceptorship, to be approved by the Credentials Committee and the board.

C. Make application to the American Board of Urology, whose duty it shall be to investigate the applicant's credentials and make a survey of his character.

D. Assure the board that he is engaged in the practice of urology and that he intends to continue to be so engaged.

E. Membership in the American Medical Association or comparable national medical association is recommended.

Any candidate who starts training before June 30, 1955, under the old requirements, may complete the program of the old requirements and thereby become acceptable for examination. No more candidates will be accepted for examination whose training has been entirely on a preceptorship basis started after March 1, 1951.

The required case histories should be prepared in duplicate, according to the instructions below, and the original sent to the board office. The duplicate should be filed in the candidate's office. The second copy will be called for if needed.

FEE

The examination fee is $150. (This fee will be increased when the expense of the examinations and other activities of the board demand.) $50 must accompany the application. If, on investigation, an applicant is found lacking in any of the requirements stated above, he will be notified that he is ineligible for examination. $100 must be paid when the applicant is accepted as a candidate for certification. Neither fee shall be returnable in any event.

If a candidate fails, he will be permitted a second examination after one year or within three years, without additional fee, but he must give 60 days' notice of his intention to appear for reexamination. After an applicant has failed twice, he must file a new application and pay a second fee.

REQUIREMENTS FOR CERTIFICATION

According to the by-laws of the American Board of Urology, applications received from applicants for certification shall be examined by the Credentials Committee and reviewed by the board. When additional data are required to complete the application, these will be requested by the secretary.

The requirements for certification include: preparation of reports of twenty-five representative (not necessarily consecutive) major urological cases from private practice, which must contain all items essential for diagnosis, therapy, prognosis, results of treatment, etc.; oral-clinical examinations, written examinations, and personal appearance before the board.

In specific instances, the board may waive any part of these requirements, with the exception of the item of personal appearance.

Each candidate will receive a notice of the time and place of the examinations, and an appointment for his personal appearance before the board.

EXAMINATIONS AND REPORTS OF CASE HISTORIES

The board will hold one examination per year. This may be held in association with the annual meetings of the American Urological Association or the American Medical Association, when this is practicable, or at other times and places that the board may select, or deem expedient.

The written examinations are designed to test the candidate's preparation in, and his knowledge of, the whole field of urology, including the fundamental subjects: pathology, anatomy, physiology, embryology, bacteriology, physiological chemistry, and endocrinology. These may be given at the time of the oral-clinical examination, or may be held on certain dates simultaneously in different parts of the country at places convenient for candidates. The examination in pathology will consist of the identification of gross specimens and of sections of tissue observed through the microscope. The examination in anatomy, physiology, embryology, bacteriology, physiological chemistry, and endocrinology will be a test of the candidate's working knowledge of these subjects as they are related to the practice of urology.

The oral-clinical examination will consist of discussions of common urologic conditions. The subjects forming the basis of this examination are urography; diseases of the genital organs, including the prostate; diseases of the urinary bladder, and diseases of the ureters and kidneys. The examination may deal directly with data found in the reports of case histories that the candidates have submitted. It will ascertain the candidate's familiarity with recent literature, the breadth of his clinical experience, and his general qualifications for practice in the specialty of urology.

The professional adaptability of each candidate will be investigated in an attempt to determine his ethical conduct and his attitude toward his patients and fellow practitioners.

The reports of twenty-five major urologic cases must be representative reports from private practice. The reports must be typewritten on 8½ by 11 paper and in duplicate, but need not be on any special form.

Complete index lists must accompany the reports. If they are obtained from more than one hospital they must be consecutive and a separate index list of each group should be provided. These lists must state the operator's name at the head of each page, the name of the patient, the hospital and admission number, and the dates of operation. Statements from the superintendents of the hospitals attesting that the candidate was the operator *must be included.* With the twenty-five case reports there must also be an index, in consecutive order, of all major and minor urologic surgery done during the last two years of practice. The lists should be filed in the secretary's office for verification purposes.

The data should be placed under proper headings, and the arrangement of these should conform to the sequence of events incidental to the patient's admission to the hospital or clinic, the examinations made and treatment prescribed.

Sufficient data should appear in these so that the examiner will know that a proper history was taken and that a thorough examination, including a complete physical survey, was made.

The board requires that all of the essential points of the history and examination, as well as a complete description of the surgical procedure, shall be given. Emphasis should be placed on the following items: preoperative diagnosis, clinical and pathological diagnosis, laboratory data, including cultures of urine and chemical analysis of calculi; summary of postoperative course with special reference to morbidity, clinical findings at time of discharge from the hospital, and subsequent follow-up reports.

A final short paragraph *must be prepared* for each case. This must include the candidate's interpretation of the history in terms of pathology; the basis for the diagnosis; the facts that determined the treatment prescribed, whether surgical or otherwise; the course of treatment to be pursued following discharge from the hospital or clinic; a critical discussion of the knowledge gained from the proper handling of the case, or from the errors made (if any) in the diagnosis and method of treatment.

Each candidate must assume personal responsibility for the data in his case reports, including autopsy findings and interpretation of urograms.

A candidate must remember that these case reports are documentary evidence of his ability and that the material in them and the manner of presentation are important evidences of his competence as a urologist.

The deadline for the receipt of case histories each year is Sept. 1.

Satisfactory case reports must be submitted before a candidate will be permitted to continue with other parts of his examination. If case reports are pronounced unsatisfactory by more than one examiner, the candidate will be informed of this and requested to prepare others.

LIMITATIONS OF FUNCTIONS OF THE BOARD

The conferring of degrees, "Doctor of Medicine" or "Bachelor of Medicine" remains with the universities, where it belongs. This board makes no attempt to control the practice of urology by license, or legal regulation and in no way interferes with or limits the professional activities of any duly licensed physician.

Information regarding the Advisory Board for Medical Specialties and the 19 Examining Boards for Medical Specialties, which appears in this issue, and the data included in the Internship and Residency Number, Sept. 25, will be published in the Directory of Approved Internships and Residencies as a separate reprint.

MEDICAL NEWS

CALIFORNIA

Symposium on Heart Disease.—The San Francisco Heart Association will present the 25th annual Postgraduate Symposium on Heart Disease, Oct. 6 to 8, at Larkin Hall in the Civic Auditorium, with the cooperation of the heart associations of Alameda County, Marin County, Monterey County, Santa Clara, and San Mateo County. Among the speakers will be Dr. Viking Olov Bjork, Stockholm, Sweden; Sir Russell C. Brock, London, England; Drs. Pedro Cossio and Manuel Rene Malinow, Buenos Aires, Argentina; Dr. Frederick Horace Smirk, Dunedin, New Zealand; and Dr. Charles T. Dotter, Portland, Ore. Registrations may be made through the San Francisco Heart Association, 604 Mission St., YUkon 2-5753.

Medical Symposiums at Los Angeles.—The division of postgraduate medical education of the University of California at Los Angeles School of Medicine, in cooperation with the Orange County Medical Association, the Riverside County Medical Association, and the San Bernardino County Medical Society, will present the following symposiums in room 1101 of the Social Science and Humanities Building on the Riverside campus of the University of California:

Oct. 6, 9 a.m. to 5 p.m., Peripheral Vascular Diseases.
Oct. 13, 9 a. m. to 5 p. m., Highlights of Clinical Endocrinology.
Oct. 20, 1 p.m. to 9:30 p.m., Problems in Anesthesia.

Offered through the facilities of University Extension, the symposiums are open only to graduates of medical schools approved by the A. M. A. Council on Medical Education and Hospitals. Each day will carry seven hours of credit approval from the California Academy of General Practice, and certificates of completion will be granted on request. Fee for the series of three symposiums is $50; $17.50 for single classes. There will be luncheon and dinner gatherings at the Mission Inn. Information and application blanks may be obtained from Dr. Thomas H. Sternberg, Head, Division of Postgraduate Medical Education, University of California Medical Center, Los Angeles 24 (BRadshaw 26161).

CONNECTICUT

Society News.—Dr. John J. Blasko was recently elected president of the Seminar Corporation for the Connecticut Postgraduate Seminar in Psychiatry and Neurology; Dr. Philip J. Moorad, New Britain, vice-president; Dr. William F. Green, Newtown, secretary; and Dr. Arthur Ebbert Jr., New Haven, treasurer.

Fall Lecture Series.—The program committee of the Hartford Medical Society announces the following series of lectures, which are scheduled from 5 to 8:30 p. m.:

Oct. 4, Ovid O. Meyer, Madison, Wis.: Some Aspects of the Anemias.
Oct. 18, John L. Parks, Washington, D. C.: Lesions of the Vulva.
Nov. 1, Homer W. Smith, Sc.D., New York: Renal Function.
Nov. 15, Harry Gold, New York: Cardiac Arrhythmias: Mechanisms and Method of Treatment.
Dec. 6, T. Duckett Jones, New York: Rheumatic Fever.
Dec. 20, Alfred A. Gellhorn, New York: Chemotherapy of Cancer.
Jan. 3, 1955 (Annual Meeting), Mr. Samuel Ramsay: The Value of a Sense of Humor.
Jan. 17, Charles Lee Buxton, New Haven, Conn.: Common Endocrine Problems in Gynecology.

DELAWARE

State Medical Meeting in Dover.—The Medical Society of Delaware will hold its annual meeting at the Peoples Church Community Hall, Dover, Oct. 11 to 13, under the presidency of Dr. Hewitt W. Smith, Harrington. After "Description of Common Diseases of the Ocular Fundus" by Dr. J. Robert Fox, Dover, "The Chemotherapy of Pulmonary Infections" will be discussed by Dr. William P. Boger, Philadelphia, and "The Acute Abdomen" by Dr. Victor P. Satinsky, Philadelphia. The Medical Society of Delaware will be host at a luncheon for members and guests at 12:30 p. m. The following afternoon program will be presented by physicians from Baltimore:

Importance of Early Diagnosis in Cancer of the Prostate, J. A. Campbell Colston.
Functional Problems of Gynecology, Edmund R. Novak.
Some Essentials in Office Proctology, Samuel McLanahan.
Office Surgery for the General Practitioner, George G. Finney.

At 6:45 p. m. a reception and dinner (subscription) will be held at Maple Dale Country Club, where an address will be delivered at 9 p. m. by U. S. Senator J. Allen Frear Jr.

The Wednesday session will open at 9:30 a. m. with a talk on the American Medical Education Foundation by Dr. Caziville L. Hudiburg, Wilmington, after which "The Preventable Complications of Myocardial Infarction" will be considered by Dr. A. Henry Clagett Jr., Wilmington. "What Price Antimicrobial Therapy" is the topic of a paper by Dr. Harrison F. Flippin, Philadelphia, which will be followed by the presidential address, "The Physician and Public Relations" by Dr. Smith. The Kent County Medical Society will give a 12:30 luncheon for state society members, guests, and the woman's auxiliary, which will meet concurrently. The afternoon will be devoted to a symposium on traffic accidents. The woman's auxiliary has scheduled a luncheon Tuesday at Maple Dale Country Club, at which the guest speaker will be Dr. Ernest B. Howard, Assistant Secretary, American Medical Association, Chicago.

GEORGIA

Society News.—Guest speaker at the meeting of the Georgia Obstetrical and Gynecological Society in the General Oglethorpe Hotel, Savannah, Oct. 2, will be Dr. Ralph A. Reis, Chicago, whose subject will be "Reevaluation of Endocrine Therapy in Obstetrics and Gynecology."

Medical School Celebrates Centennial.—Emory University School of Medicine in Atlanta will observe its 100th anniversary, Oct. 4 and 5. Addresses will be delivered by Dr. Alfred Blalock, professor of surgery, Johns Hopkins University School of Medicine, Baltimore; Dr. John F. Fulton, professor of physiology and professor of the history of medicine, Yale University School of Medicine, New Haven, Conn.; Dr. Stanhope Bayne-Jones, director of research of the medical department of the U. S. Army; Dr. Cyrus C. Sturgis, professor of medicine, University of Michigan Medical School, Ann Arbor; and Dr. Evarts A. Graham, professor of surgery, Washington University School of Medicine, St. Louis. On Monday there will be a luncheon for alumni, faculty, and all persons attending the morning program; after the medical addresses of the afternoon there will be tours of the medical school and the campus. A reception for almuni at 6 p. m. will precede the medical alumni association banquet. The Centennial Convocation ceremonies are scheduled for 10 a. m. on Tuesday, and luncheon for all persons attending the ceremonies, at noon in the university gymnasium.

ILLINOIS

Psychiatry Lectures in Winnetka.—The North Shore Health Resort, 225 Sheridan Road, Winnetka, invites physicians to attend its fifth annual lecture series, entitled "Treatment in Psychiatry—II." The lectures will be given the first Wednesday of each month, with the exception of October (second Wednesday) and May (moved up one week to the fourth Wednesday in April). Opening the series Oct. 13 will be "The Evaluation of the Patient's Emotional State by the General Practitioner" by Dr. Frederick C. Redlich, professor of psychiatry, Yale University School of Medicine, New Haven, Conn.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

Chicago

Cancer Lectures at Northwestern.—Northwestern University Medical School, Chicago, has announced the following changes in the series of cancer lectures that will be given in the auditorium of the Veterans Administration Research Hospital, 333 E. Huron St. (The Journal, Sept. 25, 1954, page 435). On Oct. 13 Dr. Joseph H. Burchenal, New York, will give a lecture, "Treatment of Leukemia," which was previously scheduled for Oct. 20. On Oct. 20 Dr. Charles B. Huggins, Chicago, will have as his topic "Cancer of the Prostate." Dr. Huggins was previously scheduled to talk on Oct. 13.

Health Officer Needed.—The Civil Service Commission, city of Chicago, will hold an examination Oct. 18 for field health officer (Board of Health), part time, branch III, class M, grade 3 (for original appointment, $2,724-$2,886 a year). A license to practice medicine in the state of Illinois is required. Applicants must be citizens of the United States, at least 21 years of age (veterans not subject to age limitations), and residents of Chicago for at least one year next preceding dates of examinations. Application must be filed with the Civil Service Commission, 208 City Hall, before 4:30 p. m. weekdays (12 noon Saturdays) on or before Oct. 14.

MISSOURI

Hans Selye to Give Memorial Lecture.—At 10 a. m., Oct. 4, Dr. Hans Selye, professor and director, Institute of Experimental Medicine and Surgery, University of Montreal, Canada, will deliver the Edward Holman Skinner Memorial lecture, "Stress and Disease," for the fall clinical conference of the Kansas City Southwest Clinical Society in the Little Theatre, Municipal Auditorium, Kansas City.

Physicians' Orchestra.—Members of the St. Louis Medical Society are welcome to join a newly organized physicians' symphony orchestra. There will be no tryouts, and previous orchestra experience is not required. The first rehearsal of the St. Louis Physicians' Orchestra was held Sept. 21 at the home of Dr. Walter J. Siebert, No. 3 Oakleigh Lane, Ladue, where meetings will be held each third Tuesday at 8 p. m. All interns and residents are cordially invited to participate. For information, call JE 3-9656 or contact Dr. Ben G. Mannis, 462 N. Taylor, St. Louis.

Panel Discussions.—The Jackson County Medical Society has planned the following panel discussions: Oct. 6, The Acute Abdomen, with Dr. Lawrence P. Engel, Kansas City, as moderator and Drs. Willis E. Brown, Little Rock, Ark.; John F. Holt, Ann Arbor, Mich.; Lucian A. Smith, Rochester, Minn.; and Robert M. Zollinger, Columbus, Ohio, as guest participators, and Oct. 7, The Rational Use of Antibiotics, with Dr. Hubert M. Parker, Kansas City, as moderator and as guest participators, Drs. Truman G. Blocker Jr., Galveston, Texas; Willis E. Brown, Little Rock, Ark.; Justin J. Cordonnier, St. Louis; William A. Sodeman, Columbia; Tom D. Spies, Birmingham, Ala.; and Robert M. Zollinger, Columbus, Ohio.

MONTANA

Crippled Children Clinics.—Dr. Paul R. Ensign, Helena, director of the division of child health services, state board of health, announces the following clinics for crippled children, planned by local health or welfare agencies in the counties served:

Billings, Oct. 8, St. Vincent's Hospital: for children from Yellowstone, Golden Valley, Stillwater, Big Horn, Musselshell, Carbon, Wheatland, and Petroleum counties.
Livingston, Oct. 12, Winans School: for children from Park, Meagher, Gallatin, and Sweet Grass counties.
Butte, Oct. 14 and 15, Webster-Garfield School: for children from Silver Bow, Powell, Deer Lodge, Granite, Beaverhead, Madison, and S. Jefferson counties.
Kalispell, Oct. 26, Kalispell General Hospital: for children from Flathead and Lincoln counties.
Polson, Oct. 27, Bank Building: for Lake and Sanders county children.
Great Falls, Nov. 16 and 17, City-County Health Department: for children from Cascade, S. Chouteau, Teton, and Judith Basin counties.
Helena, Dec. 1, Shodair Crippled Children's Hospital: for children from Lewis and Clark, Broadwater, and N. Jefferson counties.

Any child under 21 years of age who is believed to have a crippling condition may be brought to the diagnostic clinics. Children may be referred to the clinics by family physicians, public health nurses, or welfare workers. Referrals by public health nurses and welfare workers are cleared for the clinics through local physicians. A pediatrician and an orthopedist will examine the children in the parents' presence and report to the family physician, the parents, and the local public health nurse.

NEW YORK

Symposium on Blood Transfusions.—The Westchester County Medical Society will be host for the meeting of the Ninth District branch, Oct. 6, at Sleepy Hollow Country Club in Scarborough. A symposium on blood transfusions will be presented at 3:30 p. m., with Dr. Aaron Kellner, New York, president, American Association of Blood Banks, as moderator. Cocktails at 5:30 will precede the dinner, at which Dr. Dan Mellen, Rome, president, Medical Society of the State of New York, will deliver an address and Mr. Dean Arnold will discuss "Human Relations in Industry."

Medical TV Series.—"Medically Speaking," a new series of 13 weekly television programs (10:30 to 11 a. m.) presented over Station WRGB, Albany, began with a telecast, "Protecting Your Child," produced under the guidance of Dr. Paul R. Patterson, chairman of the department of pediatrics at Albany Medical College. The series is sponsored by the Mohawk-Hudson Council on Educational Television. "It's Your Heart" was discussed under technical direction of Dr. John F. Filippone on Sept. 22 and of Dr. Joseph T. Doyle on Sept. 29. Other presentations with their leaders or coordinators will include:

Oct. 6, The Case of the Low Blood Count, Thomas F. Frawley.
Oct. 13, Advances in Surgery, John C. McClintock.
Oct. 20. Modern Anesthesia, J. Gerard Converse.
Oct. 27, Body Structure and Chemistry, Jack M. Wolfe, Ph.D., and Arthur Knudson, Ph.D.
Nov. 3, Fits and Facts, William L. Hold Jr. and Frederick H. Hesser.
Nov. 10, Under the Microscope, Arthur W. Wright.
Nov. 17, The Atom and Your Health, John F. Roach.
Nov. 24, Women's Health, Arthur J. Wallingford.
Dec. 1, The Student-Doctor, Morris Weinstein, M.A.
Dec. 8, Is Medicine for Me, Harold C. Wiggers, Ph.D.

Throughout the entire series of "Medically Speaking," the specialists advising each particular program will be assisted by other physicians in their fields and by nurses, technicians, and students from the Albany Medical Center. Equipment used will be personally supplied by the physicians or will be borrowed from Albany Medical College.

New York City

Symposium on Diabetes.—The clinical society of the New York Diabetes Association will present its second symposium day on diabetes, Oct. 14, at the auditorium, Memorial Center for Cancer and Allied Diseases, 444 E. 68th St. "Vascular Disease in Diabetes Mellitus" is the topic of the symposium. After welcoming remarks by Dr. Frederick W. Williams, retiring chairman of the society, the following presentations will be made before 1:30 luncheon:

Atherosclerotic Lesions in Diabetes, Margaret Bevans, New York.
Morphogeny of the Capillary Vascular Lesions of Diabetes, James I. Berkman, New York.
Normal Serum Lipid Metabolism, Forrest E. Kendall, Ph.D., New York.
Metabolism of the Serum Lipids in Diabetes and in Arteriosclerosis, George V. Mann, Boston.
Capillary Vascular Lesion, Louis Leiter, New York.
Present-Day Concepts of Diabetic Retinopathy, Isadore Givner, New York.

At 2:15 p. m. "Coronary Artery Disease in the Diabetic" will be presented by Dr. Alexander Marble, Boston, after which Dr. Laurance W. Kinsell, Oakland, Calif., will discuss "Prevention of Vascular Disease in the Diabetic." "The Management of the Diabetic with Vascular Disease" by Dr. Henry B. Mulholland, Charlottesville, Va., president of the American Diabetes Association, will precede closing remarks by Dr. Herbert Pollack, president, New York Diabetes Association. At the dinner (7:15 p. m.) at New York Academy of Sciences, 2 E. 63rd St., Ancel B. Keys, Ph.D., director, laboratory of physiological hygiene, University of Minnesota, Minneapolis, will have as his topic "Relative Obesity and the Blood Chemistry in Man."

OHIO

Society News.—The 110th Scientific Assembly of the Northwestern Ohio Medical Association will be held in the Shawhan Hotel, Tiffin, Oct. 6. Interested physicians are invited. The scientific program will include the following presentations:

Management of Prolonged Labor, D. Frank Kaltreider, Baltimore.
Planning of Antibacterial Management with a Consideration of Pitfalls, Paul S. Rhoads, Chicago.
Management of Facial Fractures, Joseph W. Ewing, Akron.
Emergency Care of Head Injuries, Laurence M. Weinberger, Akron.

PENNSYLVANIA

Course in Respiratory Diseases.—The Pennsylvania Trudeau Society, in cooperation with the Laennec Society of Philadelphia, will give a course in respiratory diseases Wednesday afternoons, 2 to 4 p. m., at the College of Physicians, 19 S. 22nd St., Philadelphia, from Oct. 6 to Dec. 8. The tuition will be $35. The following program has been approved for 20 credits by the American Academy of General Practice:

Oct. 6, Office Work-Up of Patients with Pulmonary Problems.
Oct. 13, Diagnosis and Management of Acute Respiratory Infections.
Oct. 20, Diagnosis and Management of Bronchiectasis.
Oct. 27, Diagnosis and Management of Emphysema and Pulmonary Fibrosis.
Nov. 3, Diagnosis and Management of Pulmonary Neoplasm.
Nov. 10, Tuberculosis in Children.
Nov. 17, Treatment of Pulmonary Tuberculosis.
Nov. 24, Unusual Pulmonary Diseases.
Dec. 1, Industrial Problems in Respiratory Disease.
Dec. 8, Chest Conference.

Philadelphia

Symposium on Anthrax.—A symposium on anthrax in man will be held Oct. 8 at the Hospital of the University of Pennsylvania, Philadelphia, under the joint sponsorship of the department of health, commonwealth of Pennsylvania; the department of public health, city of Philadelphia; and the University of Pennsylvania School of Medicine. All interested persons are invited. There will be no registration fee. Information may be obtained from Harry E. Morton, Sc.D., professor of bacteriology, University of Pennsylvania.

TENNESSEE

University News.—Dr. Rudolf D. von Capeller from Riehen, Switzerland, has joined the division of pharmacology of the University of Tennessee Medical Units, Memphis, where he will teach and conduct research in hypertension. Dr. von Capeller recently served as an assistant in the department of pharmacology at his alma mater, the University of Basel.

Course in Cardiac Management.—A course in cardiac arrest, prevention, and management, Oct. 14 and 15, will be directed by Dr. Harwell Wilson, chief of the division of surgery, and Dr. Sam H. Sanders, head of the department of otolaryngology, University of Tennessee College of Medicine, Memphis, and will include demonstrations in the experimental surgery laboratory with class participation. The course will be limited to 20 physicians.

WISCONSIN

State Medical Meeting in Milwaukee.—The annual meeting of the State Medical Society of Wisconsin will be held in Milwaukee Oct. 4 to 6, with scientific programs at the Milwaukee Auditorium. The presidential address will be delivered by Dr. H. Kent Tenney, Madison, at the annual dinner at the Hotel Schroeder, Wednesday, after which the address of the incoming president will be given by Dr. Arthur J. McCarey, Green Bay. The scientific assembly will open Monday, 2:30 p. m., with presentation of the Theresa Rogers Memorial lecture, Rogers Memorial Sanitarium, "What Patients Expect of Their Physicians," by Dr. Leo H. Bartemeier, Detroit, who will also preside at one of the nine round-table luncheons preceding the afternoon session. His luncheon topic will be "Everyday Emotional Problems in Medical Practice." At 3 p. m. Dr. John Adriani, New Orleans, will discuss "Surgical Risks from the Standpoint of Anesthesia," and at 4:15 p. m. Dr. Paul C. Williams, Dallas, Texas, will speak on low back pain. The Tuesday afternoon assembly will hear Dr. Hans Selye, Montreal, Canada, discuss "Recent Progress in the Study of Diseases of Adaption"; Dr. Robert B. Lawson, Miami, Fla., "Treatment in Infancy and Childhood"; Dr. W. Brandon Macomber, Albany, N. Y., "Treatment of Malignancies in the Specialty of Plastic Surgery"; and Dr. Frederick W. Fitz, Chicago, "The Doctor and His Heart." The following program will be presented at the closing scientific assembly, Wednesday afternoon:

John I. Brewer, Chicago: Evaluation of Surgical Procedures in Uterine and Perineal Relaxation.
Charles S. Cameron, New York: Cancer: Research Progress.
Henry Doubilet, New York: Present Status of Surgical Treatment of Duodenal Ulcer.
Thomas J. O'Neill, Philadelphia: Surgery of Heart Disease, Excluding Valvular Defects.

Special interest programs include the following presentations:

Pediatrics (Tuesday): Infectious Croup, Albert J. Schroeder, Minneapolis.
Radiology (Tuesday): Simple Bone Cysts, Aneurysmal Bone Cysts, and Giant Cell Tumors, David G. Pugh, Rochester, Minn.
Anesthesia (Tuesday): Carbon Dioxide Gas Exchange in the Body, Albert Faulconer, Rochester, Minn.
Obstetrics and Gynecology (Wednesday): Uses and Abuses of Oxytocics in Obstetrics, Howard J. Tatum, New Orleans.
Surgery (Wednesday): Use of ACTH and Cortisone in Surgical Patients, William J. Grove, Chicago.
Ophthalmology and Otolaryngology (Wednesday): Retrolental Fibroplasia, Justin M. Donegan, Chicago. Treatment of Painful Neuralgias of the Head, George S. Baker, Rochester, Minn.

On Tuesday at 10:45 a. m. the Lucy Ann Droessel Memorial lecture, Wisconsin Heart Association, "Pain in the Chest," will be delivered by Dr. William B. Bean, Iowa City. Wednesday Dr. Cameron will present "Epidemiologic and Laboratory Evidence of Causes of Lung Cancer," a lecture sponsored by the Milwaukee and Wisconsin divisions of the American Cancer Society as part of the special interest program on cardiac and pulmonary diseases. Daily round-table luncheons will be held at the Hotel Schroeder from 12:45 to 1:30 p. m.

GENERAL

A. M. A. Identification Card Stolen.—Dr. Roland T. Smith, Joplin, Mo., reports the theft of his billfold containing his 1954 A. M. A. identification card, which may be used illegally by some other person.

Clinical Orthopaedic Society.—The Clinical Orthopaedic Society will meet Oct. 7 to 9 at Thorne Hall, Northwestern University Medical School, Chicago, under the presidency of Dr. C. Leslie Mitchell, Detroit. Sixty-three presentations have been scheduled, with discussion periods. A cocktail party at the Sheraton Hotel, 6:30 p. m., will precede the annual dinner.

The Story of Hippocrates on Television.—The ethics of the medical profession will receive a salute over the NBC television network Sunday, Oct. 10, when Hallmark's Hall of Fame presents the story of Hippocrates. Titled "The Immortal Oath," the program will dramatize the life of the early physician, telling how he came to write the code that has served medicine from that day to this. Hallmark's Hall of Fame originates live from New York at 5 p. m. Eastern Standard Time. It will be carried by 45 television stations from coast to coast.

Accident Death Toll.—The National Safety Council announces that for the seventh consecutive month in 1954 the traffic accident death toll showed a decrease from the comparable month in 1953. Although the July death toll was 3,150, the largest total for any month this year, nevertheless it was 3% below the July, 1953, figure. At the end of seven months the death total stood at 19,450, 5% lower than the 20,500 figure for the corresponding period a year ago. No traffic deaths in July were recorded by 374 of the 492 reporting cities, the largest of which was Portland, Ore. (373,600), with St. Paul (311,300) and Oklahoma City (243,500) next in size. For seven months, 138 of the reporting cities maintained perfect records. The three largest were Richmond, Calif. (99,500), Fresno, Calif. (91,700), and East Orange, N. J. (79,300).

Meeting on Nuclear Science.—The Institute of Radio Engineers Professional Group on Nuclear Science will hold its first national annual meeting in Chicago, Oct. 6 and 7, at the Sherman Hotel, the first day's session coinciding with the last day of the National

Electronics Conference. The program will be divided into the following technical sessions of invited and contributed papers: (1) Nuclear Medical Electronics, (2) General Nucleonic Instrumentation, (3) European and American Reactor Technology, and (4) European and American Particle Accelerator Technology. The program Wednesday evening will consist of a cocktail party followed by motion pictures on nuclear weapons tests and other significant documentary films.

Examination for Associate Biostatistician.—The New York State Department of Civil Service will hold an examination for associate biostatisticians Nov. 6. Applications for the examination, which is open to any qualified citizen of the United States, will be accepted up to Oct. 8. The salary is from $6,590 to $8,070. At present there is one vacancy, in the Roswell Park Memorial Institute at Buffalo. Candidates must be college graduates and have 30 graduate semester credit hours in statistics or biostatistics and three years of professional statistical experience, two of them in biostatistics, and must either have two more years of experience or have completed all the requirements for the Ph.D. degree in statistics or biostatistics. An equivalent combination of education and experience may be accepted. Information may be obtained from the Recruitment Office, New York State Department of Civil Service, Albany.

New England Society of Anesthesiologists.—The New England Society of Anesthesiologists will meet at Mary Hitchcock Memorial Hospital, Hanover, N. H., Oct. 8, when the morning will be devoted to a clinical session. The scientific session will begin at 2 p. m. with "Gary—Two Years After" by Dr. Agnes V. Bartlett, Springfield, Vt., who will give a two year follow-up presentation on the patient, who at the age of 3 suffered prolonged hypoxia after having been locked accidentally in an abandoned ice box. At 2:35 p. m. Dr. Bernard R. Fink, New York, will speak on laryngospasm, and at 3:25 p. m. Dr. Morris L. Heller, Hanover, N. H., will discuss "Light Nitrous Oxide Anesthesia for the Poor Risk Patient." At 4:30 p. m. Abbott Laboratories of North Chicago will be host at a cocktail party at the Hanover Inn. After dinner, 5:30 to 7 p. m., Dr. Wesley Bourne, McGill University, Montreal, Canada, guest of honor, will speak.

Annual Tuberculosis Conference.—The 41st annual meeting of the Mississippi Valley Conference on Tuberculosis and the Mississippi Valley Trudeau Society will be held at the Town House, Kansas City, Kan., Oct. 7 to 9. Highlights of the program include "The Shifting Emphasis in Tuberculosis Control," Thursday, by Dr. William B. Tucker, chief, pulmonary disease service, Veterans Administration Research Hospital, Chicago; a session on home treatment of tuberculosis, Friday, in which participants will be Drs. James J. Waring of Denver, Joseph B. Stocklen of Cleveland, Paul T. Chapman of Detroit, and Julius L. Wilson of Philadelphia; a panel on pulmonary emphysema, Friday, with Dr. Oscar A. Sander, Milwaukee, as moderator; "Not Me, Judge," a mock trial of a "recalcitrant patient" with Judge James F. Bell, London, Ohio, presiding over this public health session on Saturday; and, simultaneously, a conference on differential diagnosis of chest diseases at the University of Kansas Medical Center.

Meeting on Muscular Dystrophy.—The third medical conference of the Muscular Dystrophy Associations of America will be held Oct. 8 and 9 at the New Yorker Hotel in New York City. The following symposiums have been scheduled:

Advances in Basic Muscle Chemistry, Physiology and Pharmacology (chairman, Wallace O. Fenn, Ph.D., Rochester, N. Y.).
Clinical Management of Patients (chairman, John B. Griggs, Newington, Conn.).
Contracture of Muscle (chairman, Herbert S. Gasser, New York).
Degeneration, Regeneration and Growth of Muscle (chairman, Derek E. Denny-Brown, Boston).
M.D.A.A. Chapters and the Patient Service Program (chairman, Dr. Arthur S. Abramson, New York).
Recent Advances in Knowledge of Metabolic Alterations in Muscular Dystrophy (chairman, Ralph W. Gerard, Chicago).

At a luncheon for professional registrants Friday, 12:30 p. m., the speaker will be Joseph C. Hinsey, Ph.D., director, New York Hospital-Cornell Medical Center. At 4:45 p. m. motion pictures will be shown in the North Ballroom.

Meeting of Medical Record Librarians.—The American Association of Medical Record Librarians will hold its annual conference Oct. 4 to 8 at the Sheraton-Cadillac Hotel, Detroit. Wednesday morning "Advances in Medicine" will be presented by the following physicians:

Grosvenor W. Bissell, Buffalo: Latest Trends in Hormone Therapy.
Forest D. Dodrill, Detroit: The Mechanical Heart.
Albert H. Holland Jr., Washington, D. C.: Drugs, Records, and You.

On Thursday at 9 a. m. "Standard Nomenclature for Registered Medical Record Librarians" will be considered by Adaline C. Hayden, R.R.L., associate editor, Standard Nomenclature of Diseases and Operations, A. M. A., Chicago. Thursday afternoon Dr. Crofford O. Vermillion, St. Louis, will talk on medical records machine methods. Friday morning will be devoted to a report on hospital accreditation from the Joint Commission on Accreditation of Hospitals by Dr. Kenneth B. Babcock, Chicago, and from the hospital administrator by Mr. Franklin D. Carr, Detroit. Drs. Roger B. Nelson, Ann Arbor, Mich., and Malcolm T. MacEachern, Chicago, are scheduled to participate in the conference.

Meeting on Psychosomatic Medicine.—The Academy of Psychosomatic Medicine will hold its first annual meeting at the Hotel Plaza, New York, Oct. 8 and 9. Dr. William Kaufman, Bridgeport, Conn., president, will open the sessions with "The Physician's Role in the Preparation for Surgery," after which the psychosomatic aspects of anesthesia will be presented by Dr. Emery A. Rovenstine, New York; of cardiovascular surgery by Dr. Louis Faugeres Bishop, New York (medical aspects) and Dr. Houck E. Bolton, Philadelphia (surgical aspects); and of obstetrics and gynecology by Dr. William S. Kroger, Chicago. Dr. Alfred J. Cantor, Flushing, N. Y., will discuss "General Semantics of Anorectal and Colon Surgery," after which psychosomatic aspects will be further considered by the following speakers from New York City: Drs. I. Melbourne Greenberg (neurosurgery); Lester L. Coleman (otolaryngology); Jacob A. Salzmann, D.D.S. (orthodontics and cleft palate); and Arthur Joseph Barsky (mutilation operations). Psychiatric summation will be presented by Dr. Arthur N. Foxe, New York. After a talk on planning for the future by Dr. Kaufman, there will be round-table discussion of the psychosomatic problems brought up at the conference.

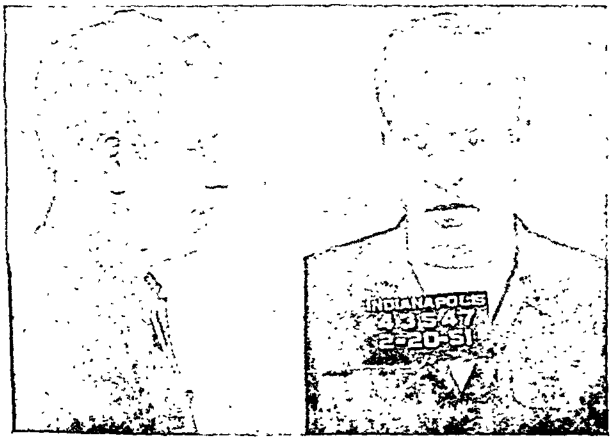
Health Officers Visit Latin America.—Dr. M. G. Candau of Geneva, Switzerland, director-general, World Health Organization, and Dr. Fred L. Soper, director, Pan American Sanitary Bureau, WHO regional office for the Western Hemisphere, left Washington Sept. 5 on a trip through Latin America. They will together pay their respects to the ministers of foreign affairs in the various countries and will discuss with the health ministers problems of mutual interest concerning the programs of WHO and the PASB. They will visit Cuba, Mexico, Guatemala, Colombia, Peru, Brazil, Uruguay, Argentina, and Chile, where they will attend the inauguration of the 14th Pan American Sanitary Conference in Santiago, Oct. 7. Dr. Candau will return to the United States to address the annual meeting of the National Citizens Committee for WHO, Oct. 11, in Buffalo, where he will also attend the annual meeting of the American Public Health Association. The visit of Drs. Soper and Candau to Guatemala, Oct. 10, will coincide with the inauguration of the new building of the Institute of Nutrition of Central America and Panama (INCAP), an institution sponsored by the Pan American Sanitary Bureau. The construction of INCAP's new building has just been completed by the government of Guatemala, one of the institute's six member states. The bureau's zone offices, located in Mexico; Guatemala; Lima, Peru; Rio de Janeiro, Brazil; and Buenos Aires, Argentina, will be visited in the course of the trip.

Meeting of Obstetricians and Gynecologists.—The 22nd annual meeting of the Central Association of Obstetricians and Gynecologists will be held at the Hotel Jefferson, St. Louis, Oct. 7 to 9. The guest speaker, Dr. Nicholson J. Eastman, obstetrician-in-chief, Johns Hopkins Hospital, Baltimore, will present "The Etiology of Cerebral Palsy," after which he will lead the discussion period on cephalopelvic disproportion and Dr. William

J. Dieckmann, Chicago, the discussion period on the place for operative obstetrics. Breech presentation will be considered by Dr. Leroy A. Calkins, Kansas City, Kan., and a report of a 21 year study at the Lewis Maternity Memorial Hospital in Chicago will be made by Dr. Herbert E. Schmitz of that city. Other presentations will include:

Rupture of the Marginal Sinus, James Henry Ferguson, New Orleans.
Further Experiences with Direct Sky Blue in the In Vivo Study of Gynecic Lymphatics, Eduard Eichner, Cleveland.
A Bead Packing Technique for the Application of Uniform Doses of Irradiation to the Endometrial Cavity: An Experimental Approach, Charles H. Hendricks, Cleveland.
Pheochromocytoma Complicated by Pregnancy, J. William Peelen, Kalamazoo, Mich.
Adrenogenital Virilism with Adrenal Cortical Hypofunction: A Clinical Entity, James E. Keeler, Kansas City, Mo.
The Repeat Cesarean Section, John R. Wolff, Chicago.
Studies on Fetal Membranes: II. Microscopic Anatomy, David N. Danforth, Evanston, Ill.
Use of Cortisone in Prevention of Erythroblastosis in Rh-Sensitized Mothers, Isadore Dyer, New Orleans.
Routine Exploration of the Uterus, Robert J. Hawkins, Chicago.

Wanted for Post Office Robbery.—The Post Office Department has requested THE JOURNAL to publish an item concerning one George Edward Payne, alias Ed Brown, alias George Brown, who is wanted for the robbery of a post office station in Indianapolis on Dec. 23, 1951, during which robbery Payne is said to have shot the post office clerk, wounding him seriously. Payne is 28 years old, white, and 5 ft. 11 in. tall, weighs about 170 lb., has dark brown eyes, and is soft-spoken. On his inner forearm is a tattoo of a girl's head, and on the outer forearm are the letters "JOE." There is a blue tattoo of "13" at the base of his thumb and a blue tattoo of a bird on the upper forearm with letters "PAT" inset. Payne is said to be suffering from some kidney or lung ailment that requires him to visit a physician at least once a month. Any physician who contacts this man should report at once to Post Office Inspector in Charge, Cincinnati 1, Ohio. Phone (collect) CHerry 5820, Ext. 406.



Anesthetists Meet in Los Angeles.—The 29th Congress of Anesthetists, the annual meeting of the members of the International Anesthesia Research Society, will convene at the Ambassador Hotel, Los Angeles, Oct. 11 to 14. At 10:30 a. m. Monday there will be a panel on teaching of anesthesiology and at 2 p. m. a panel on acute and chronic poliomyelitis. A tour of the Respiratory Center for Poliomyelitis, Rancho Los Amigos, has been planned for Tuesday afternoon. A color motion picture, "Anesthesia in Adult Tonsillectomy Using Sodium Pentothal," by Dr. Fordyce A. Johnson, Pasadena, Calif., will be shown Wednesday at 10:45 a. m.; slides on exchange transfusion by Dr. Louis K. Diamond, Boston, at 3:30 p. m.; and a motion picture, "Newer Concepts of Infant Resuscitation," by Dr. Roy F. Goddard, Albuquerque, N. Mex., Thursday at 11:15 a. m. At 2:30 p. m. Angus J. Smith, London, England, will present "Hibernation Anesthesia in Major Surgery," after which John G. Fairer, London, will discuss "Role of Hibernation Anesthesia in the Prevention and Treatment of Surgical Shock."

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States and its territories and possessions in the weeks ended as indicated:

	Sept. 4, 1954		
Area	Paralytic Type	Total Cases Reported	Sept. 5, 1953, Total
New England States			
Maine	2	6	22
New Hampshire	..	6	1
Vermont	5	7	7
[illegible]	10	72	40
[illegible]	..	16	22
[illegible]	6	22	32
Middle Atlantic States			
New York	37	111	196
New Jersey	31	48	68
Pennsylvania	..	83	78
East North Central States			
Ohio	26	165	178
Indiana	12	35	26
Illinois	58	140	165
Michigan	47	117	159
Wisconsin	6	32	56
West North Central States			
Minnesota	14	54	183
Iowa	40	115	30
Missouri	24	46	85
North Dakota	..	8	14
South Dakota	1	5	8
Nebraska	18	38	9
Kansas	3	43	35
South Atlantic States			
Delaware	3	3	1
Maryland	9	18	39
District of Columbia	1	2	5
Virginia	17	30	32
West Virginia	10	27	31
North Carolina	16	39	30
South Carolina	12	18	8
Georgia	16	38	14
Florida	18	56	26
East South Central States			
Kentucky	..	55	20
Tennessee	4	30	25
Alabama	8	17	8
Mississippi	5	17	8
West South Central States			
Arkansas	10	19	17
Louisiana	16	22	24
Oklahoma	1	16	22
Texas	53	129	62
Mountain States			
Montana	3	7	19
Idaho	..	7	2
Wyoming	4	11	4
Colorado	14	27	8
New Mexico	3	14	5
Arizona	2	9	37
Utah	..	7	19
Nevada	..	8	..
Pacific States			
Washington	12	26	30
Oregon	7	16	26
California	122	268	183
Territories and Possessions			
Alaska	4	17	1
Hawaii	2	5	1
Puerto Rico	..	..	..
Total	722	2,117	2,136

CANADA

Life Insurance Medical Directors.—The Association of Life Insurance Medical Directors of America will hold its 63rd annual meeting at the Royal York Hotel, Toronto, Canada, Oct. 12 to 14. Wednesday afternoon a symposium, "Coronary Artery Disease," will be given by Drs. J. Keith Gordon and Edward S. Mills, Montreal, and Clifton L. Reeder, Chicago. Other presentations include:

The Present Medical Situation, Ray F. Farquharson, Toronto.
Differentiation and Assessment of Basal Systolic Murmurs, John H. Halliday, Sydney, Australia.
Radioactive Isotopes and Insurability, John P. Gemmell, Winnipeg.
Insurability After Chest Surgery, Robert M. Janes, Toronto.
Advances in the Study of Stress, Hans Selye, Montreal.
A New Technique for Identifying Reducing Substances in the Urine: Paper Chromatography, Donald H. Woodhouse and Guy E. Joron, Montreal.
Neurosurgery Today and Tomorrow, E. Henry Botterell, Toronto.
Cancer Mortality, Neil E. McKinnon, Toronto.

CORRECTION

Desensitization to Wasp Sting.—In the query by this title in THE JOURNAL, Aug. 28, 1954, page 1621, in the 11th line of the answer, the word histamine should have been antihistamine.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1954 Clinical Meeting, Miami Florida, Nov. 29-Dec. 2.
1955 Annual Meeting, Atlantic City, N. J., June 6-10.
1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.
1956 Annual Meeting, Chicago, June 11-15.
1956 Clinical Meeting, Seattle, Nov. 27-30.

Academy of Psychosomatic Medicine, New York, Oct. 8-9. Dr. Ethan Allan Brown, 75 Bay State Road, Boston 15, Secretary.

American Academy for Cerebral Palsy, Williamsburg Inn, Williamsburg, Va., Nov 4-6. Dr. Harry E. Barnett, 116 South Michigan Blvd., Chicago 3, Secretary.

American Academy of Pediatrics, Palmer House, Chicago, Oct. 4-7. Dr. E. H. Christopherson, 610 Church St., Evanston, Ill., Secretary.

American Association of Medical Clinics, Jung Hotel, New Orleans, Nov. 12-14. Dr. Arthur H. Griep, 420 Cherry St., Evansville, Ind., Secretary.

American Association of Medical Record Librarians, Sheraton-Cadillac Hotel, Detroit, Oct. 4-8. Miss Doris Gleason, 510 N. Dearborn St., Chicago 10, Executive Director.

American Association for the Surgery of Trauma, Hotel Claridge, Atlantic City, N. J., Nov. 11-13. Dr. James K. Stack, 700 North Michigan Blvd., Chicago 11, Secretary.

American Cancer Society, Hotel Roosevelt, New York, Oct. 17-24. Dr. Charles S. Cameron, 47 Beaver St., New York 4, Medical Director.

American Clinical and Climatological Association, Lake Placid Club, Lake Placid, N. Y., Oct. 14-16. Dr. Marshall N. Fulton, 124 Waterman St., Providence 6, R. I., Secretary.

American College of Cardiology, Interim Meeting, Algiers Hotel, Miami Beach, Florida, Nov. 11-13. Dr. Philip Reichert, 140 West 57th St., New York 19, Secretary.

American College of Gastroenterology, The Shoreham, Washington, D. C., Oct. 25-30. Dr. A. Xerxes Rossien, 33 West 60th St., New York 23, Secretary.

American College of Surgeons, Convention Hall, Atlantic City, N. J., Nov. 14-19. Dr. Michael L. Mason, 40 East Erie St., Chicago 11, Secretary.

American Dental Association, Miami, Fla., Nov. 8-11. Dr. Harold Hillenbrand, 222 East Superior St., Chicago 11, General Secretary.

American Fracture Association, Shamrock Hotel, Houston, Texas, Oct. 11-14. Dr. H. W. Wellmerling, 626 Griesheim Bldg., Bloomington, Ill., Secretary-General.

American Public Health Association, Memorial Auditorium, Buffalo, N. Y., Oct. 11-15. Dr. Reginald M. Atwater, 1790 Broadway, New York 19, Executive Secretary.

American Society of Anesthesiologists, Netherland-Plaza Hotel, Cincinnati, Oct. 25-30. Dr. J. Earl Remlinger Jr., 188 West Randolph St., Chicago 1, Secretary.

American Society for the Study of Arteriosclerosis, Sheraton Hotel, Chicago, Oct. 31-Nov. 1. Dr. O. J. Pollak, P. O. Box 228, Dover, Del., Secretary.

American Society of Tropical Medicine and Hygiene, Hotel Peabody, Memphis, Tenn., Nov. 4-6. Dr. John E. Larsh Jr., Dept. of Parasitology, School of Public Health, Univ. of North Carolina, Chapel Hill, N. C., Secretary.

American Therapeutic Society, The Chase Hotel, St. Louis, Nov. 4-7. Dr. Oscar B. Hunter, 915 Nineteenth St. N. W., Washington, D. C., Secretary.

Association of American Medical Colleges, French Lick Springs Hotel, French Lick, Ind., Oct. 17-20. Dr. Dean F. Smiley, 185 N. Wabash Ave., Chicago 1, Secretary.

Association of Life Insurance Medical Directors of America, Royal York Hotel, Toronto, Canada, Oct. 12-14. Dr. Henry B. Kirkland, P. O. Box 594, Newark, N. J., Secretary.

California Academy of General Practice, Statler Hotel, Los Angeles, Oct. 24-27. Mr. Wm. W. Rogers, 461 Market St., San Francisco 5, Executive Secretary.

Central Association of Obstetricians and Gynecologists, Hotel Jefferson, St. Louis, Oct. 7-9. Dr. Harold L. Gainey, Suite 602, 116 S.

Gulf Coast Clinical Society, Edgewater Park, Miss., Oct. 21-22. Dr. F. C. Minkler, Pascagoula, Miss., Secretary.

Indiana State Medical Association, Murat Temple, Indianapolis, Oct. 26-28. Mr. James A. Waggener, 23 East Ohio St., Indianapolis 4, Executive Secretary.

Interstate Post Graduate Medical Asssociation of North America, Municipal Auditorium, Minneapolis, Nov. 1-4. Dr. Erwin R. Schmidt, 1300 University Ave., Madison 6, Wis., Secretary.

Inter-Society Cytology Council, Statler Hotel, Boston, Nov. 12-13. Dr. John B. Graham, 32 Fruit St., Boston, Chairman, Program Committee.

Kansas City Southwest Clinical Society, Kansas City, Mo., Oct. 4-7. Dr. Ira C. Layton, 306 E. Twelfth St., Kansas City 6E, Mo., Secretary.

Michigan State Medical Society, Sheraton-Cadillac Hotel, Detroit, Sept. 29-Oct. 1. Dr. L. Fernald Foster, 606 Townsend St., Lansing 15, Secretary.

Midwestern Section of American Federation for Clinical Research, Thorne Hall Auditorium, Northwestern University Medical Campus, Chicago, Oct. 28. Dr. R. L. Grissom, Univ. of Nebraska College of Medicine, Dept. of Internal Medicine, Omaha 5, Secretary.

National Association for Mental Health, Hotel Statler, New York, Oct. 23-25. Mr. Robert M. Heininger, 1790 Broadway, New York 19, Executive Director.

National Proctologic Association, Maryland Hotel, Chicago, Oct. 7-9. Dr. George E. Mueller, 59 E. Madison St., Chicago 2, Executive Secretary.

National Rehabilitation Association, Baltimore, Oct. 24-27. Mr. E. B. Whitten, 514-16 Arlington Bldg., 1025 Vermont Ave., N.W., Washington, D. C., Executive Director.

National Society for Crippled Children and Adults, Statler Hotel, Boston, Nov. 3-5. Mr. Lawrence J. Linck, 11 South LaSalle St., Chicago 3, Executive Director.

New Hampshire Medical Society, Mt. Washington Hotel, Bretton Woods, Oct. 3-5. Dr. W. H. Butterfield, 18 School St., Concord, Secretary.

Oklahoma City Clinical Society Conference, Oklahoma City, Oct. 25-28. Dr. Charles E. Leonard, 512 Medical Arts Bldg., Oklahoma City 2, Secretary.

Omaha Mid-West Clinical Society, Paxton Hotel, Omaha, Oct. 25-28. Dr. Louis E. Moon, 1031 Medical Arts Bldg., Omaha 2, Secretary.

Oregon State Medical Society, Heathman Hotel, Portland, Oct. 13-16. Dr. Charles E. Littlehales, 1115 S. W. Taylor St., Portland 5, Executive Secretary.

Pennsylvania, Medical Society of the State of, Bellevue-Stratford Hotel, Philadelphia, Oct. 17-22. Dr. Harold B. Gardner, 230 State St., Harrisburg, Secretary.

Post-Graduate Clinic, Michigan Academy of General Practice, Sheraton-Cadillac Hotel, Detroit, Nov. 10-11. Dr. F. P. Rhoades, 970 Maccabees Bldg., Detroit 2, Chairman.

Regional Meetings, American College of Physicians:

- Midwest, Indianapolis, Claypool Hotel, Oct. 9. Dr. Wendell A. Shullenberger, 3470 Central Ave., Indianapolis, Chairman.
- New England, Hartford, Conn., Oct. 22. Dr. John C. Leonard, 80 Seymour St., Hartford, Conn., Chairman.
- New Jersey, Newark, Nov. 3. Dr. Edward C. Klein Jr., 6 South Kingman Rd., South Orange, N. J., Governor.
- Southeastern, Edgewater Gulf Hotel, Edgewater Park, Miss., Oct. 15-16. Dr. E. Dice Lineberry, 1529 N. 25th St., Birmingham 4, Ala., Governor.
- Western New York, Syracuse, Nov. 19. Dr. Edward C. Reifenstein, 109 South Warren St., Syracuse 2, Governor.
- Western Pennsylvania, Pittsburgh, Oct. 27. Dr. Roy R. Snowden, 3509 Fifth Ave., Pittsburgh 13, Chairman.

Southern Medical Association, St. Louis, Nov. 8-11. Mr. C. P. Loranz, 1020 Empire Bldg., Birmingham 3, Ala., Secretary.

Southern Society of Cancer Cytology, St. Louis, Nov. 8-11. Dr. J. Ernest Ayre, 1155 N.W. 14th St., Miami, Fla., Secretary.

Southwestern Medical Association, Hotel Paso del Norte, El Paso, Texas, Nov. 17-19. Dr. Celso C. Stapp, 800 Montana St., El Paso, Texas, Secretary.

Vermont State Medical Society, Mt. Washington Hotel, Bretton Woods, N. H., Oct. 3-5. Dr. James P. Hammond, 337 South St., Bennington, Secretary.

Virginia, Medical Society of, Shoreham Hotel, Washington, D. C., Oct. 31-Nov. 3. Mr. Robert I. Howard, 1105 W. Franklin St., Richmond, Executive Secretary.

Wisconsin, State Medical Society of, Hotel Schroeder, Milwaukee, Oct.

Congress of International Association of Applied Psychology, London, England, July 18-23, 1955. Dr. C. B. Frisby, National Institute of Industrial Psychology, 14 Welbeck St, London, W.1, England, President.

Congress of the International Diabetes Federation, Cambridge, England, July 4-8, 1955. Mr. James G. L. Jackson, 152 Harley St., London, W.1, England, Executive Secretary General.

Health Congress of the Royal Sanitary Institute, Bournemouth, England, April 26-29, 1955. Mr. P. Arthur Wells, Royal Sanitary Institute, 90 Buckingham Palace Road, London, S.W.1, England, Secretary.

Inter-American Congress of Radiology, Shoreham Hotel, Washington, D. C, U. S. A, April 24-29, 1955. Dr. Eugene P. Pendergrass, 3400 Spruce St, Philadelphia 4, Pa., U. S. A., Secretary-General.

Inter-American Session, American College of Surgeons, Universidad Mayor de San Marcos de Lima, Lima, Peru, S. A, Jan. 11-14, 1955. Dr. Michael L. Mason, 40 East Erie St., Chicago 11, Ill., U. S. A., *Secretary.*

International Anatomical Congress, Paris, France, July 25-30, 1955. Prof. Gaston Cordier, 45, rue des Saints-Pères, Paris 6^e, France, Secretary-General.

International Anesthesia Research Society, Ambassador Hotel, Los Angeles, Calif., U. S A, Oct. 10-14, 1954. For information write: Dr. T. H. Seldon, 102-110 Second Avenue S. W., Rochester, Minn., U. S. A.

International Congress of Biochemistry, Brussels, Belgium, Aug. 1-6, 1955. Prof. C. Liebecq, 17 Place Delcour, Liege, Belgium, Secretary-General.

International Congress of Comparative Pathology, Lausanne, Switzerland, May 26-31, 1955. Professor Hauduroy, 19 rue Cesar Roux, Lausanne, Switzerland, Secretary-General.

International Congress on Diseases of the Chest, Barcelona, Spain, Oct. 4-8, 1954. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Ill., U. S. A, Executive Secretary.

International Congress of Military Medicine and Pharmacy, Luxemburg, Luxemburg, Nov. 7-12, 1954. Colonel A. R. Vernengo, Direcion General de Sanidad Militar, Pozos 2045, Buenos Aires, Argentina, S. A., *Secretary-General.*

International Congress of Plastic Surgery, Stockholm, Sweden, Aug. 1-4, 1955, and Uppsala, Sweden, Aug. 5, 1955. Dr. Tord Skoog, Uppsala, Sweden, General Secretary.

International Hospital Congress, Lucerne, Switzerland, May 30-June 3, 1955. Capt. J. E. Stone, International Hospital Federation, 10 Old Jewry, London, E.C.2, England, Hon. Secretary.

International Surgical Congress, Geneva, Switzerland, May 23-26, 1955. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary-General.

Japan Medical Congress, Kyoto University and Kyoto Prefectural Medical College, Kyoto, Japan, April 1-5, 1955. Dr. Mitsuharu Goto, University Hospital, Medical Faculty of Kyoto University, Kyoto, Japan, Secretary-General.

Latin American Congress of Physical Medicine, Lima, Peru, S. A, Feb. 14-19, 1955. Dr. Cassius Lopez de Victoria, 176 East 71st St., New York 21, N. Y., U. S. A., Executive Director.

Pan-American Academy of General Practice, Lima, Peru, S. A., Feb 11-25, 1955. Dr. Arturo Martinez, 54 East 72nd St., New York 21, N. Y., U. S. A., Secretary.

Pan American Homeopathic Medical Congress, Hotel Gloria, Rio de Janeiro, Brazil, S. A., Oct. 2-13, 1954. Dr. Paul S. Schantz, 103 West Main St., Ephrata, Pa, U. S. A, Executive Secretary.

Pan-Pacific Surgical Congress, Honolulu, Hawaii, Oct. 7-18, 1954. Dr. F. J. *Pinkerton, Suite 7, Young Bldg, Honolulu 13, Hawaii, Director* General.

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

Arizona:* *Examination and Reciprocity.* Phoenix, Oct 13-15, Jan. 12-14, 1955, and April 13-15, 1955. Ex. Sec., Mr. Robert Carpenter, 401 Security Bldg, Phoenix.

Arkansas:* *Examination.* Little Rock, Nov. 4-5. Sec., Dr. Joe Verser, Harrisburg.

California: *Written.* Sacramento, Oct. 18-21. *Oral* Los Angeles, Nov. 20. *Oral and Clinical Examination for Foreign Medical School Graduates.* Sec, Dr. Louis E Jones, 1020 N Street, Sacramento.

Colorado.* *Reciprocity.* Denver, Oct. 13. *Examination.* Denver, Dec. 7-8. Exec Sec., Mrs. B. H. Hudgens, 831 Republic Bldg, Denver 2.

Connecticut:* *Examination.* Hartford, Nov. 9-10. Sec, Dr. Creighton Barker, 160 St. Ronan St., New Haven.

Delaware: *Examination and Reciprocity.* Dover, Jan. 11-13, 1955. Sec., Dr. J. S. McDaniel, 229 So. State St., Dover.

District of Columbia:* *Examination.* Washington, Nov. 8-9. Deputy Director, Mr. Paul Foley, Department of Occupations and Professions, 1740 Massachusetts Ave., N.W., Washington.

Idaho *Examination and Endorsement.* Boise, Jan. 10-12, 1955. Exec. Sec., Mr. Armand L. Bird, 364 Sonna Bldg, Boise.

Illinois' *Examination and Reciprocity.* Chicago, Oct. 5-7. Supt. of Registration, Mr. Frederic B. Selcke, Capitol Bldg, Springfield.

Iowa:* *Examination.* Des Moines, Dec. 6-8. Exec. Sec., Mr. Ronald V. Saf, New State Office Bldg., Des Moines 19.

Kansas: *Examination and Reciprocity.* Topeka, Dec. 8-9. Sec., Dr. O. W. Davidson, 872 New Brotherhood Bldg., Kansas City.

Kentucky: *Examination.* Louisville, Dec. 6-8. Asst. Sec., Mr. R. F. Dixon, 620 S. 3rd St., Louisville.

Maine: *Examination and Endorsement. Portland,* Nov. 9-10. *Sec.,* Dr. Adam P. Leighton, 192 State St, Portland.

Massachusetts: *Examination* Boston, Jan 18-21, 1955. Sec., Dr. Robert C. Cochrane, Room 37, State House, Boston.

Michigan.* *Examination.* Lansing, Oct. 13-15. Sec., Dr. J. Earl McIntyre, 118 Stevens T. Mason Bldg, Lansing.

Minnesota:* *Examination and Reciprocity.* Minneapolis, Oct. 19-21. Sec, Dr. E. M. Jones, 230 Lowry Medical Arts Bldg, St. Paul 2

Mississippi: *Reciprocity.* Jackson, December. Asst. Sec., Dr. R. Whitfield, Old Capitol, Jackson 113.

Montana: *Examination and Reciprocity.* Helena, Oct. 4. Sec., Dr. S. A. Cooney, 214 Power Block, Helena.

Nebraska:* *Examination.* Omaha, June, 1955. Director, Bureau of Examining Boards, Mr. Husted K. Watson, State Capitol Bldg, Room 1009, Lincoln 9.

Nevada:* *Examination and Endorsement.* Reno, Oct. 5. Sec., Dr G. H Ross, 112 Curry St, Carson City.

New Jersey: *Examination.* Trenton, Oct. 19-22. Sec, Dr. E. S. Hallinger, 28 W. State St, Trenton.

New Mexico.* *Examination and Reciprocity.* Santa Fe, Oct. 11-12. Sec., Dr. R. C. Derbyshire, 227 E. Palace Ave, Santa Fe.

North Carolina: *Endorsement.* Rocky Mount, Oct. 4. Sec., Dr. Joseph J. Combs, Professional Building, Raleigh.

North Dakota: *Examination* Grand Forks, Jan. 5-8, 1955. *Reciprocity.* Grand Forks, Jan. 8 Sec., Dr. C. J. Glaspel, Grafton

Ohio: *Examination* Columbus, Dec. 13-15. *Reciprocity.* Columbus, Oct. 4. Sec, Dr. H. M. Platter, Wyandotte Bldg, Columbus 15.

Oregon:* *Examination and Reciprocity. Portland,* Oct. 14-16. *Exec. Sec.,* Mr. Howard I. Bobbitt, 609 Failing Building, Portland 4.

Rhode Island.* *Examination.* Providence, Oct. 7-8. Administrator of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

South Carolina: *Examination and Reciprocity.* Columbia, Nov. 8. Sec., Mr. N. B. Heyward, 1329 Blanding St., Columbia.

Texas:* *Examination and Reciprocity.* Fort Worth, Dec. 2-4. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth 2.

Utah: *Reciprocity.* Salt Lake City, Nov. 16. Director, Department of Registration, Mr. Frank E. Lees, 324 State Capitol Bldg., Salt Lake City.

Virginia: *Examination.* Richmond, Dec. 9-11. *Reciprocity.* Richmond, Dec. 8. Address: Board of Medical Examiners, 631 First St., S.W., Roanoke.

West Virginia: *Examination.* Charleston, Oct. 11. Sec., Dr. Newman H. Dyer, State Office Bldg. No. 3, Charleston 5.

Wisconsin:* *Reciprocity.* Madison, Oct. 15. Sec., Dr. Thomas W. Tormey, Room 1140, State Office Bldg., Madison 2.

Wyoming: *Examination and Reciprocity.* Cheyenne, Oct. 4. Sec., Dr. Franklin D. Yoder, State Office Bldg., Cheyenne.

Alaska:* On application. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

Guam: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Sec., Dr. Benedict Cooper, Agana.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: On application. Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau

Arkansas: *Examination.* Little Rock, Oct. 5-6. Sec., Dr. Louis E. Gebauer, 1002 Donaghey Bldg., Little Rock.

District of Columbia: *Examination.* Washington, Oct. 18-19. Deputy Director, Department of Occupations and Professions, Mr. Paul Foley, 1740 Massachusetts Ave., N.W., Washington.

Florida: *Examination.* Gainesville, Nov. 6. Sec., Mr. M. W. Emmel, Box 340, University of Florida, Gainesville.

Iowa: *Examination.* Des Moines, Oct. 12. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

Michigan: *Examination.* Detroit and Ann Arbor, Oct. 8-9. Sec., Mrs. Anne Baker, Mason Bldg, Lansing 2.

Nebraska: *Examination* Omaha, Oct. 5-6. Director, Mr. Husted K. Watson, Room 1009, State Capitol Bldg, Lincoln 9

Nevada: *Examination.* Reno, Oct. 5. Sec, Dr. Donald G. Cooney, Box 9005, University of Nevada, Reno

New Mexico. *Examination.* Santa Fe, Oct. 17. Sec., Mrs. Marguerite Cantrell, P. O. Box 1522, Santa Fe.

Oklahoma. Oklahoma City, April 8-9, 1955. Sec, Dr. C. Gallaher, 813 Braniff Bldg, Oklahoma City

Oregon. *Examination.* Portland, Dec. 4 Sec, Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

Rhode Island' *Examination* Providence, Nov. 10 Administrator of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg, Providence.

Tennessee: *Examination* Memphis, Sept. 20-21. Sec., Dr. O. W. Hyman, 874 Union Ave, Memphis 3.

Texas: *Examination* Austin, Oct. 22-23. Address, Mrs. Betty Ratcliff, Chief Clerk, 407 Perry-Brooks Bldg, Austin.

Wisconsin: *Examination* Milwaukee, Dec. 4. Sec., Mr. W. H. Barber, 621 Ransom St., Ripon.

---

*Basic Science Certificate required.

DEATHS

Harrison, Roy Bertrand ⊕ New Orleans; born in Boyce, La., in 1891; Medical Department of Tulane University of Louisiana, New Orleans, 1912; after serving an internship at Charity Hospital, began the practice of surgery in New Orleans; from 1912 to 1925 instructor in surgery at his alma mater, and then from 1931 to 1935 served as professor of clinical surgery at Louisiana State University School of Medicine; a member of the Advisory Council on Medical Education of the American Medical Association; past president of the Louisiana State Medical Society, which in July of this year presented him with a plaque in recognition of his distinguished services to medicine and the medical profession over a period of 42 years; appointed a member and secretary-treasurer of the Louisiana State Board of Medical Examiners in 1921 and served continuously until 1953, when he was named honorary secretary, completing one of the longest periods of service on record; past president and vice-president of the Federation of State Medical Boards of the United States; from 1942 to 1953 member of the National Board of Medical Examiners, serving as a member of its executive board since 1946; fellow of the American College of Surgeons; founder of the Surgical Association of Louisiana, of which he was the first president in 1947-1948; commander in the Medical Corps of the U. S. Navy during World War I; member of the founders' group of the American Board of Surgery; senior visiting surgeon at the old Presbyterian Hospital from 1912 to 1918 and associate staff surgeon from 1918 to 1924; since the formation of Southern Baptist Hospital in 1927, was senior member of the hospital staff, serving as president of the staff in 1934 and 1935; died July 25, aged 62, of nephritis.

McAlester, Andrew Walker ⊕ Kansas City, Mo.; born in Columbia Feb. 19, 1876; University of Missouri School of Medicine, Columbia, 1905; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; member of the House of Delegates of the American Medical Association in 1910, 1912, 1913, 1915, and 1922; at one time secretary of the Missouri State Medical Association; served in France during World War I; formerly professor of ophthalmology at the University of Kansas School of Medicine, Kansas City, Kan.; on the staff of the Menorah Hospital; consultant at the Kansas City General Hospital; oculist at St. Luke's and Research hospitals; oculist for the Chicago, Burlington and Quincy Railroad; died Aug. 17, aged 78.

Beaver, Donald Charles ⊕ Detroit; born in Detroit Feb. 10, 1895; Detroit College of Medicine, 1927; specialist certified by the American Board of Pathology; clinical professor of pathology at his alma mater, now known as the Wayne University College of Medicine; member of the American Association of Pathologists and Bacteriologists and the American Society of Clinical Pathologists; founding fellow of the College of American Pathologists; founder, a member of the administrative board, and consultant of the Michigan Tumor Registry; founder, for several years treasurer, and, at his death, president of the Detroit Institute of Cancer Research; on the staff of the Woman's Hospital; died Aug. 10, aged 59.

Anderson, E. Stanley, Lima, Ohio; McGill University Faculty of Medicine, Montreal, Canada, 1924; member of the American Psychiatric Association; affiliated with the Lima State Hospital; died Aug. 9, aged 63.

Aronowitz, Harry Thomas ⊕ Bayonne, N. J.; St. Louis University School of Medicine, 1932; treasurer of the Bayonne Medical Society, of which he was past president; recording secretary of the Hudson County Medical Society; secretary of the medical board of the Bayonne Hospital, where he died July 27, aged 48.

Bell, John Carr, Belzoni, Miss.; Memphis (Tenn.) Hospital Medical College, 1898; died Aug. 18, aged 80, of peripheral neuritis.

Bizzell, Thomas Malcolm ⊕ Goldsboro, N. C.; University of Maryland School of Medicine, Baltimore, 1908; died June 9, aged 68, of myocardial infarction and hypertension.

Blott, Harmon E., Youngstown, Ohio; Western Reserve University Medical Department, Cleveland, 1888; past president of the Mahoning County Medical Society; served as county coroner and on the board of education; for many years affiliated with the Youngstown Hospital; died in the Masonic Home in Springfield July 24, aged 89, of cerebral hemorrhage and arteriosclerotic heart disease.

Bockman, Michael W. H., Hot Springs National Park, Ark.; University of Minnesota Medical School, Minneapolis, 1903; member of the Minnesota State Medical Association; served during World War I; formerly on the staff of St. Mary's Hospital in Minneapolis; died July 29, aged 75, of coronary disease.

Bomar, Francis Harrison, Knoxville, Tenn.; Tennessee Medical College, Knoxville, 1902; on the staff of the Knoxville General Hospital; died July 19, aged 77, of a heart attack.

Bond, Franco Gales, Flat River, Mo.; Ensworth Medical College, St. Joseph, 1912; died June 30, aged 67.

Books, William Johnston, New York City; Hahnemann Medical College and Hospital of Philadelphia, 1912; assistant professor of medicine at the New York Medical College, Flower and Fifth Avenue Hospitals; affiliated with Flower and Fifth Avenue Hospitals; died Aug. 15, aged 66.

Booth, Joel Clarence, Lebanon, Ore.; College of Physicians and Surgeons of San Francisco, 1900; for many years state senator; formerly mayor; served during World War I; affiliated with Lebanon Community Hospital; died July 18, aged 81, of arteriosclerosis and diabetes mellitus.

Bradley, Milton Maddox, Chatham, Ill.; Marion-Sims College of Medicine, St. Louis, 1892; died Aug. 2, aged 90, of shock as the result of a fall.

Cannon, Roy Francis ⊕ Joplin, Mo.; University Medical College of Kansas City, 1909; member of the Oklahoma State Medical Association; past president of the Ottawa County (Okla.) Medical Society; served during World War I; died in St. John's Hospital July 15, aged 65, of cerebral thrombosis.

Corry, Robert Thomas, New Canaan, Conn.; Columbia University College of Physicians and Surgeons, New York, 1913; died April 1, aged 65, of coronary occlusion.

Dowling, James Reginald ⊕ Massillon, Ohio; Queen's University Faculty of Medicine, Kingston, Ontario, Canada, 1929; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; served during World War II; member of the staffs at Mercy and Aultman hospitals in Canton, and City Hospital in Massillon; died June 3, aged 48, of coronary heart disease.

Dunn, Joseph Clair, Cooperstown, Pa.; Eclectic Medical Institute, Cincinnati, 1897; president of the school board; affiliated with Franklin (Pa.) Hospital and the Oil City (Pa.) Hospital; died Aug. 9, aged 92, of virus pneumonia.

Farlow, Merton Almond ⊕ Lieut. Col., U. S. Army, retired, Indianapolis; Indiana University School of Medicine, Indianapolis, 1908; entered the regular army in 1920; retired Dec. 31, 1937; served in the U. S. Army for 21 years; for many years on the staff of the Central State Hospital; died July 3, aged 71.

Forrest, Charles George, Clearbrook, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1899; died June 17, aged 88, of arteriosclerosis.

Gilmer, John Axley, Big Stone Gap, Va.; Maryland Medical College, Baltimore, 1904; died June 13, aged 63, of arteriosclerosis.

⊕ Indicates Member of the American Medical Association.

Graham, Arthur Henry, Montgomery, Ala.; University of Toronto Faculty of Medicine, Toronto, Canada, 1922; specialist certified by the American Board of Public Health; member of the American Public Health Association; county health officer; died Aug. 18, aged 53, of a heart attack.

Guyer, Frederick Newman ⊕ Albany, N. Y.; Albany Medical College, 1897; formerly deputy city health inspector; a director of the Permanent Savings and Loan Association; died in the Albany Hospital July 29, aged 83.

Hewitt, Bryant Jefferson ⊕ McComb, Miss.; Memphis (Tenn.) Hospital Medical College, 1911; died Aug. 21, aged 68.

Hopkirk, Clarence Cowles ⊕ Los Angeles; Northwestern University Medical School, Chicago, 1910; specialist certified by the American Board of Radiology; member of the Radiological Society of North America and the American College of Radiology; at one time a medical missionary in Korea; one of the founders and on the staffs of St. John's Hospital and Santa Monica Hospital in Santa Monica, where he died July 10, aged 68, of cerebral hemorrhage.

Hoyle, Christian Kevin Campbell ⊕ Asheville, N. C.; University of Virginia Department of Medicine, Charlottesville, 1939; served during World War II; affiliated with the Veterans Administration Hospital in Oteen; died July 17, aged 49, of cerebral aneurysm.

Hubner, Edmund Henry ⊕ Yonkers, N. Y.; New York Medical College, Flower and Fifth Avenue Hospitals, New York, 1921; served as assistant clinical professor of obstetrics and gynecology at his alma mater; fellow of the American College of Surgeons; a lieutenant commander in the U. S. Naval Reserve during World War II; affiliated with Flower and Fifth Avenue Hospitals and Yonkers General Hospital, where he died Aug. 2, aged 63, of carcinoma of the sigmoid.

Jacobs, John Martin ⊕ Elgin, Ill.; Illinois Medical College, Chicago, 1903; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906; died in the Elgin State Hospital July 28, aged 76, of bronchopneumonia.

Joughin, James Louis ⊕ New York City; McGill University Faculty of Medicine, Montreal, Canada, 1906; formerly assistant clinical professor of neurology at Columbia University College of Physicians and Surgeons, and professor of clinical neurology and psychiatry at the New York Post Graduate Medical School and Hospital; for many years affiliated with the Neurological Institute; died in the Harkness Pavilion Aug. 17, aged 72.

King, Hiram Irving ⊕ Aberdeen, S. D.; Northwestern University Medical School, Chicago, 1905; fellow of the International College of Surgeons and the American College of Surgeons; on the staff of St. Luke's Hospital; died June 24, aged 72, of coronary occlusion.

King, Ralph ⊕ Olney, Ill.; University of Illinois College of Medicine, Chicago, 1916; served overseas during World War I; died in the Richland Memorial Hospital July 26, aged 67, of injuries received in a fall.

King, Stephen A. ⊕ Karnes City, Texas; Hospital College of Medicine, Louisville, 1890; for many years county health officer; died in San Marcos July 13, aged 86, of hemiplegia and cardiac failure.

Knox, Andrew Christy ⊕ Kansas City, Mo.; Kansas City Medical College, 1899; died in the Kansas City General Hospital Aug. 9, aged 80, of a fractured hip and bronchopneumonia.

McDermott, Joseph Zimmerman ⊕ New York City; Columbia University College of Physicians and Surgeons, New York, 1905; died July 11, aged 71, of coronary occlusion.

McDowell, Albert Sydney, Tucson, Ariz.: Detroit College of Medicine, 1902; past president of the North Central (Mich.) Medical Society; died June 21, aged 82, of coronary occlusion.

McKee, Harley Shultz ⊕ Greensburg, Ind.; Illinois Medical College, Chicago, 1907; died in St. Mary's Hospital, Rochester, Minn., June 18, aged 76, of peritonitis and carcinoma of the stomach.

Moore, Carlyle H. ⊕ Vandalia, Ill.; Barnes Medical College, St. Louis, 1896; affiliated with Mark Greer Hospital, where he died July 22, aged 80, of myocarditis.

Morehouse, Eli Martin, Lisbon, N. Y.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1901; died in Owatonna, Minn., July 9, aged 84, of carcinoma of the larynx and chronic interstitial nephritis.

Oakes, Robert Allan ⊕ San Diego, Calif.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; member of the Illinois State Medical Society; died suddenly Aug. 7, aged 72.

Rubino, Anthony Peter ⊕ Medical Director, U. S. Public Health Service, Naples, Italy; George Washington University School of Medicine, Washington, D. C., 1925; fellow of the American College of Surgeons; a medical officer in the U. S. Public Health Service since 1926; for many years on the staff of the U. S. Public Health Service Hospital in Memphis, Tenn.; medical director of the United States consulate in Naples; died June 8, aged 59, of heart disease.

Schmehl, Seymour T. ⊕ Reading, Pa.; Jefferson Medical College of Philadelphia, 1891; formerly secretary and treasurer of the Berks County Medical Society; at one time county coroner, physician of the Berks County Prison, and member of the old school board; for many years on the staff of St. Joseph's Hospital; died in Reading Hospital June 20, aged 89, of arteriosclerotic heart disease.

Schulz, Gustav Bernhard ⊕ Cape Girardeau, Mo.; Beaumont Hospital Medical College, St. Louis, 1892; an Associate Fellow of the American Medical Association; past president of the state board of health; affiliated with Southeast Missouri Hospital; president of the Southeast Savings & Loan Association; died July 8, aged 83, of cardiovascular renal syndrome.

Sheinman, Louis ⊕ New York City; Columbia University College of Physicians and Surgeons, New York, 1911; fellow of the American College of Surgeons; director of surgery at Mount Eden Hospital; on the staff of the Lebanon Hospital; died in Pine Hill Aug. 2, aged 69, of heart failure.

Taylor, Harvey Stokely ⊕ Dallas, Texas; Southwestern University Medical College, Dallas, 1911; during his practice in Kaufman served as president of the Kaufman County Medical Society; died May 19, aged 70.

Teal, D. Thompson, Chesterfield, S. C.; Baltimore Medical College, 1893; died July 19, aged 83, of carcinoma of the prostate.

Titus, Emily Newbold, Glen Cove, N. Y.; New York Medical College and Hospital for Women, Homeopathic, New York, 1894; died in the North Country Community Hospital Aug. 7, aged 91.

Van Schaick, Roy E. ⊕ Marion, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1910; affiliated with the Clintonville (Wis.) Community Hospital, where he died April 26, aged 65, of coronary infarction.

Vernaglia, Anthony Paul Joseph ⊕ Hawthorne, N. J.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1928; specialist certified by the American Board of Anesthesiology; member of the American Society of Anesthesiologists; served as president of the New Jersey Society of Anesthesiologists; died in the American Army Hospital in Baden, Germany, June 9, aged 49, of cerebral vascular accident.

Wade, Henry Albert ⊕ Brooklyn; University of the City of New York Medical Department, 1894; life fellow of the American College of Surgeons; owner and medical director of the Wade Hospital, where he died Aug. 9, aged 79, of coronary thrombosis.

Walker, Benjamin Franklin ⊕ Los Angeles; Barnes Medical College, St. Louis, 1901; an Associate Fellow of the American Medical Association; died July 11, aged 76.

Walker, James Douglas ⊕ Los Angeles; University of Minnesota College of Medicine and Surgery, Minneapolis, 1909; for many years on the staff of the California Hospital, where he died July 15, aged 73, of coronary thrombosis.

Young, Blaine Augustus, Spadra, Calif.; University of Nebraska College of Medicine, Omaha, 1914; for many years on the staff of the Pacific State Hospital; died July 20, aged 66, of coronary occlusion.

FOREIGN LETTERS

DENMARK

Detection of Sources of Syphilis.—In 1940 a social worker was attached to the Marselisborg Hospital, Aarhus, to discover the sources of infection of patients with venereal disease. The field worker had to familiarize himself with the environment of these patients and keep a special record of his discoveries. His task was not only to detect but also to persuade the sex contacts themselves to submit to medical examination. His records had to be kept independent of the hospital case records, but he was expected to keep his own records up-to-date by supplementing them with the information obtained from the hospital's staff or other physicians. Dr. Kaj Spendser has recently compared these records with the hospital's case records in an attempt to estimate the efficiency with which the sources of infection of cases of syphilis were detected. His findings are published in *Nordisk Medicin* for July 22, 1954. During the period 1943 to 1948 inclusive, 609 men and women were found to be suffering from early syphilis. They reported 1,115 sex contacts, and by dividing this number by the 609 patients a "contact index" of 1.83 was found. This figure comes somewhere between the corresponding American figures, with a minimum "contact index" of 0.87 and a maximum of 3.31. In 648 of the 1,115 contacts the name and address of the contact were given to the social worker. In 569 of the 1,115 contacts a medical examination was undertaken, and 388 were found to be syphilitic. The remaining 181 had not been infected with syphilis. Altogether 122 contacts submitted to treatment in the early stage of their disease, and 25 were treated in the latent stage. Spendser concludes that his observations compare favorably with those made in other countries. The Danish venereal disease legislation of 1947 imposes the task of detecting sources of venereal disease on the physician who undertakes to treat such cases.

Treatment of Meningitis with Streptomycin.—From 1932 to February, 1954, a total of 31 patients suffering from influenzal meningitis has been treated at the Odense County Hospital. The diagnosis was confirmed in all these cases by a bacteriological examination at the State Serum Institute. In a report on these cases by Dr. C. Mose, published in *Ugeskrift for læger* for July 22, 1954, it is pointed out that there was no great seasonal variation in the incidence of the disease but it showed a preference for children less than 3 years old. The only adult patient was a 59-year-old woman. Treatment with streptomycin was introduced in 1947. Among the 10 patients treated before the use of streptomycin only 1 recovered, whereas among the 21 streptomycin-treated patients 20 got well. The only patient who died in spite of treatment with streptomycin was a 9-month-old boy who had been ill for eight days before admission to the hospital. As soon as purulent meningitis is diagnosed, a sulfonamide, penicillin, streptomycin, and chloramphenicol are given. When a bacteriological examination reveals Hemophilus influenzae, treatment is continued with only chloramphenicol and streptomycin until the temperature has been normal for four or five days. On the strength of recent publications the author recommends regularly supplementing streptomycin with chloramphenicol in the hope of an even greater improvement in the prognosis.

Care of Deaf Children.—At a meeting of the Danish Pediatric Society, Dr. J. Arnvig gave an account of the action taken to give effect to the law of January 27, 1950, concerning the welfare of the deaf. His findings were published in *Nordisk medicin* for Aug. 12, 1954. Under the Ministry for Social Affairs a "deafness committee" is responsible for inspection by an expert on hearing of a deaf child's home and for sending such a child to an appropriate clinic for examination. When, usually after the age of 2 years, a child's speech disorder is conceivably due to defective hearing, notice is sent to the "deafness committee." The examination in the otology clinic usually takes several days and includes instructing the child's parents with regard to the measures to be taken, whether it be lip reading or any other process. In suitable cases a hearing aid is adjusted to the deaf child, whose subsequent career is followed by experts who visit the child's home. All this is done at the expense of the state. In an analysis of 484 deaf children attending four different special schools, Arnvig found that inherited diseases of hearing accounted for deafness in 28.5%, diseases of hearing acquired before birth in 8.7%, diseases of hearing acquired during birth in 10.1%, diseases of hearing acquired in childhood in 31.6%, and nonclassifiable diseases in 21.1%.

The Changing Causes of Death.—Drs. Karen Dreyer and Erna Frandsen report profound changes in the relative importance of the various causes of death between 1921 and 1951 in *Ugeskrift for læger* for Aug. 12, 1954. In 1921 cancer accounted for 12% of deaths, heart disease for 10%, tuberculosis for 9%, other infectious diseases for 7%, vascular diseases in the central nervous system for 5%, and violence for 3%. The corresponding figures for 1951 were heart disease 28%, cancer 20%, vascular diseases in the central nervous system 13%, violence 8%, tuberculosis 2%, and other infectious diseases 1%. It is deplorable that violent deaths, which include accidents, suicide, and homicide, have risen from 3% to 8%, a rise reflecting profound changes in living conditions. In 1951 every second death among boys between the ages of 5 and 14 was a violent death, and this was the case with 60% of the males between the ages of 15 and 24 years. From one-half to one-third of the violent deaths in persons under the age of 25 years were due to traffic accidents, but between the ages of 25 and 65 years suicides accounted for about half of all the violent deaths among men. For women the corresponding suicide rate was even higher.

ENGLAND

British Diabetic Association Meeting.—At the annual scientific meeting of the British Diabetic Association Dr. K. Hallas-Møller of Copenhagen delivered the eighth Banting Memorial Lecture on the insulin zinc suspensions (I. Z. S.). He said that the addition of small quantities of zinc to insulin solution in an acetate buffer produced a soluble complex that was precipitated at the pH of blood and had a delayed action. The addition of protamine, globin, or other substances of high molecular weight designed to delay absorption was, therefore, unnecessary. Two complexes are present in this new preparation, crystalline and amorphous, and the proportions of these determine the mode of action. The amorphous, which is quick acting (12 to 16 hours), is known commercially as "semi-lente." The crystalline, slower in action (30 hours), is known as "ultra-lente." A mixture of seven parts of crystalline and three parts of amorphous give an insulin, called "lente," with an intermediate action. More than 80% of diabetics can be controlled by one injection of lente insulin a day. Zinc is an essential element in the pancreas, and competition between insulin and other substances for zinc might play a part in the cause of diabetes.

Dr. S. G. Oakley of London described the results he had obtained treating 500 diabetics with the new zinc insulins. He had obtained good results in children and new patients. In old patients the dose had to be increased by at least 25% when changing over to zinc insulin, otherwise deterioration and ketosis might occur. Dr. J. M. Malins of Birmingham urged caution with any new insulin preparation, because the enthusiasm of the physician and the patient might influence the results. He found the results with insulin zinc suspension difficult to assess because it had been given to many patients with long-standing diabetes that was difficult to control by other insulins. He thought that I. Z. S. is probably as good as protamine zinc insulin (P. Z. I.) or P. Z. I. and soluble insulin in those patients who take less than 80 units of insulin a day. The great advantage of I. Z. S. is the ease of handling by the patient.

The items in these letters are contributed by regular correspondents in the various foreign countries.

Dr. G. R. Venning of Manchester said that he was using I. Z. S. routinely in outpatients and inpatients. Apart from slightly increased amounts of carbohydrate given later in the day, this should be evenly distributed. Hypoglycemia, if it occurs, is not severe and takes place from noon onwards. Local and general reactions still occur with I. Z. S. Dr. J. M. Stowers of London gave I. Z. S. to a group of patients that had not been adequately controlled. To avoid morning hyperglycemia, the insulin should be given at least an hour before breakfast and extra carbohydrate should be given later in the day. Most of the patients needed 30 to 70 units daily, although some required 150 units for adequate control. The "brittle" diabetics fare no better on I. Z. S. than on the other insulins. Dr. Nabarro of London read a paper on the use of fructose in the treatment of diabetic ketosis. This had been recommended instead of glucose, but he had found it to be no better.

Dr. J. P. Randle of Cambridge and Dr. J. Vallance-Owen of London described the assay of insulin using the utilization of glucose by the isolated rat diaphragm as a measure of insulin activity. Their results did not agree, owing to different techniques. The pituitary probably played a part in controlling some of the substances in the plasma that Dr. Randle was measuring. It was really "insulin-like activity" rather than insulin itself that he was measuring. Plasma insulin could be increased by giving glucose to normal subjects. Dr. Vallance said he found no insulin in the plasma of patients with acute diabetes, although it was present in the obese. He found that adding insulin to the plasma of patients with severe diabetes did not raise the level as measured by his rat diaphragm technique, suggesting that there is an insulin inhibitor in the plasma of such patients. Dr. F. V. Flynn of London described studies on paper chromatography in two patients with essential pentosuria; their glucose tolerance tests were normal. Dr. W. H. H. Merivale and Dr. R. A. Hunter of London gave an account of an investigation on the effects of barbiturates on carbohydrate metabolism. The glucose tolerance tests of their subjects gave abnormal curves, often with hypoglycemia five hours after the administration of the glucose. Dr. Joan Walker of Leicester said that adolescent diabetics with limited intelligence and poor environment need protection and education. Sometimes they are psychiatric problems. She had known certain patients to overdose themselves with insulin to produce a hypoglycemia in order to escape from unpleasant situations. Special centers to deal with diabetics who are psychiatric or social problems are needed.

Legal Actions Against Hospitals.—Since the hospitals were nationalized in 1948, the number of legal actions brought by patients for negligent medical or nursing treatment has increased every year. The minister of health stated that the following payments for compensation had been made to patients by hospitals in England and Wales, largely as a result of claims for damages brought in the courts: in 1948-1949, $21,168; in 1950, $66,180; in 1951, $107,956; in 1952, $298,407; and in 1953, $472,250. These sums do not include legal costs, which are also paid by the Ministry of Health and are often as much as the compensation paid. Judging from the cases reported so far it looks as if the compensation for 1954 will be in the region of one million dollars. The minister of health was asked if this was evidence that the health service under state control broke down when physicians and nurses were relieved of personal responsibility. The minister replied that he was certain that there was no deterioration in the service. The Ministry of Health has now ruled that, in cases brought by hospital patients alleging negligence of nursing staff and full time medical staff, liability is to be transferred to the hospital authority, that is, to the Ministry of Health. Medical consultants must accept individual responsibility and are not included.

A New Short-Acting Anesthetic.—In 1932 Professor Weese introduced hexobarbital. He died recently, and there has now appeared a posthumous paper, written with F. H. Koss (*Deutsche med. Wchnschr.* 79:601, 1954), on an even shorter-acting barbiturate, sodium 5,5-allyl-(2'-methyl-propyl)-thiobarbiturate, also known as "baytinal." It is specially recommended for use in short operations or painful procedures lasting for 10 minutes or less. It has been used without any mishap on 350 patients in a Düsseldorf surgical clinic. The patient need not be hospitalized and is ambulant after half an hour. There is retrograde amnesia for 10 minutes after return of consciousness and some euphoria for an hour or two. There is no sleepiness or drowsiness on recovery. Used alone the drug is unsuitable for long operations or those in which the abdominal wall must be relaxed. In such cases it can be used with succinylcholine or other muscle relaxants. Baytinal is administered intravenously in doses of 2 to 3 cc. of a 10% solution, and after one to one and a half minutes a further 1 to 3 cc. is given slowly. A further 3 to 4 cc. can be injected, but a total dose of more than 10 cc. (64 mg.) has not been used. Baytinal closely resembles hexobarbital but is more rapidly destroyed.

Aldosterone.—Treatment of a case of Addison's disease (adrenal cortical hypofunction) with aldosterone, the new salt-regulating hormone recently isolated under the name of electrocortin, has been described by Professor A. Kekwick and Dr. G. Pawan of London (*Lancet* 2:164, 1954). They regulated the oral dose to maintain the patient in reasonable electrolyte balance, the most noticeable effect being on the sodium output. The glucose tolerance test was improved, the skin pigmentation diminished, the blood pressure was raised, and there was a fall in eosinophils in the peripheral blood. Orally administered aldosterone appeared to be about 30 times as active as intramuscular injections of desoxycorticosterone acetate in maintaining sodium balance.

MEXICO

Evaluation of Tests for Adrenal Insufficiency.—Dr. Juan José Paullada in *Revista de investigación clínica* for April-June, 1954, page 249, reports the results obtained from the functional tests of the adrenal cortex in 28 patients with adrenal insufficiency studied at the Hospital de Enfermedades de la Nutrición. This study was made to determine which of these tests is most useful in diagnosis. The patients were divided into two groups: 23 with primary adrenal insufficiency and 5 with panhypopituitarism and secondary adrenal insufficiency. It was found that when a negative equilibrium in sodium and chloride ions and a retention of potassium ions existed a low blood pressure was present. There was, furthermore, a slow elimination of water due to an increase in the antidiuretic hormone or of some substance with similar physiological action. When the systolic and diastolic pressures were considered separately it was found that there was a low systolic pressure in 65% of the patients and a low diastolic pressure in 52% of the patients with primary hypoadrenalism. The systolic as well as the diastolic pressure was decreased in 20% of the patients with panhypopituitarism.

The concentration of sodium in the plasma was found to be low in 70% of the patients with primary hypoadrenalism and in none of the patients with hypopituitarism. Hyperpotassemia was found in 71% of the patients with primary hypoadrenalism and in 60% of those with panhypopituitarism. The water-elimination tests were abnormal in 95% of the patients with primary adrenal insufficiency and in 100% of those with secondary adrenal insufficiency. As a control, seven normal subjects were tested and the water test was found to be normal in all of them. Hypoglycemia was found in 38% of the patients with primary hypoadrenalism and in 40% of the patients with secondary adrenal insufficiency. Sixteen glucose tolerance tests were performed; 50% of the patients with primary hypoadrenalism showed a flat curve. Of the five patients with secondary adrenal insufficiency four had a flat curve. Seven normal controls all had curves within normal limits. The determination of the absolute number of circulating eosinophils did not give any conclusive evidence of the functional state of the adrenal cortex. Lymphocytosis was present in 100% of the patients with primary hypoadrenalism. It is said that epinephrine produces eosinopenia through stimulation of the anterior lobe of the hypophysis, which in turn causes an increase in the secretion of the corticotrophic hormone, which then stimulates the adrenal cortex to liberate 17-hydroxysteroids, which ultimately produce a decrease in circulating eosinophils. If four hours after the subcutaneous injection of epinephrine there is a 50% or greater decrease in eosinophils the adrenal cortex is normal; if it does not reach this figure, there is probably a decrease in adrenal cortical activity or some other alteration in the hypophysial-adrenal axis. Of 24 patients with primary hypoadrenalism so tested 21 showed less than 50% decrease in eosinophils. Of 21 normal controls subjected to this test 4 showed a greater than 50% fall of eosinophils when it was to be expected that all of them would be normal in this respect. This led Dr. Paullada to believe that this test has no diagnostic value in adrenal insufficiency.

The intramuscular injection of 20 units of corticotropin (ACTH) normally produces a 50% or more decrease in the circulating eosinophils after four to eight hours. This test was carried out in 14 patients with primary hypoadrenalism, and 13 showed no change. In six patients determination of 17-ketosteroids was carried out before the hormone was given and on the same day of its administration. In none of these patients was there an increase in the elimination of 17-ketosteroids. In order to check the results, eosinophil counts were done on eight normal subjects after the injection of 20 units of corticotropin. In all of them there was a decrease of 50% or more within four to eight hours of the injection. Also in two of them 17-ketosteroid elimination determinations were made and found to be markedly increased. Due to the lack of secretion of androgenic hormones, the 17-ketosteroids should be decreased to a greater degree in women than in men. The results obtained showed a 100% decrease in the patients studied. The author concludes that the most useful tests for primary or secondary adrenal insufficiency are: (1) the determination of 17-ketosteroids, (2) the lack of increase of these compounds after the intramuscular injection of 20 units of corticotropin, (3) the degree of lymphocytosis, (4) the test for water elimination, and (5) the absence of or a decrease of more than 50% in eosinophils after an intramuscular injection of 20 units of corticotropin.

PERU

Chlorpromazine in Neuropsychiatry.—At a meeting of the Neuropsychiatric Society in July, Drs. Sal y Rosas, R. Jerí, and F. Sánchez reported the results of their investigations on 63 persons affected with diverse mental and neurological diseases treated with chlorpromazine (10-[μ-diethylaminopropyl]-2-chlorophenothiazine hydrochloride). A patient with severe psychosis or neurosis was given 25 mg. of the drug intramuscularly. This daily dose was increased gradually to 250 mg. daily. This therapy was maintained from three to five weeks. From then on the oral route was used, and the dose was decreased until a daily dose of 75 to 150 mg. was reached. Simultaneously the patient was given 100 to 150 mg. of phenobarbital or amobarbital by mouth. Some patients also received electroshock therapy. All these patients were carefully watched day and night. A patient whose neurosis was less severe was given 75 to 150 mg. of chlorpromazine daily. In all patients psychological improvement was observed. Those with manic depressive psychosis showed a marked improvement, and only one required electroshock. Results were satisfactory in the patients with schizophrenia, especially in the chronic cases considered incurable, as long as the personality had not been damaged. In the patients with symptomatic psychoses moderate improvement was observed. In the epileptic patients the results have been promising, but the authors consider that the number of these patients was too small to give conclusive results. Of the patients with neuroses, the best results were obtained in those with the anxiety type. All neurotic patients also received psychotherapy, and much of their improvement was attributed to this. The patients in states of depression responded less favorably than those with anxiety. The treatment must be prolonged after the symptoms have disappeared, because relapse may occur if the dose is diminished or treatment suspended. These relapses were easily checked by resuming the original treatment. For this reason all patients are kept on a maintenance dose of the drug. In all the patients tachycardia, increase of appetite, and lowering of the blood pressure were noted, but untoward side-effects were seen in few patients. These side-effects included nasal obstruction, epistaxis, and diminution of visual acuity. If the drug is given parenterally it is less apt to cause constipation.

In June, Drs. A. Seguín and Renato Castro de la Mata of Lima had reported their experience with chlorpromazine alone. They used an average daily dose of 100 mg. given intramuscularly for three or four days, then reduced it slowly to 25 mg. daily for about 20 days. Their results were fairly good, especially in patients with excitement from any cause. In some patients with schizophrenia the response was surprisingly good. None of the Peruvian investigators has attempted to produce a state of artificial hibernation in any of their patients with this drug. They have only produced a state of apathy in which the patients will respond to stimuli but give the impression that they would like to be alone.

Typhus in Peru.—The Public Health and Social Assistance Ministry, in collaboration with the regional Pan-American sanitary office of the World Health Organization, has started a campaign to study and control murine typhus in the south of Peru. Since 1950 a 10% chlorophenothane (DDT) powder has been used to control the disease. This was at first applied using hand atomizers every six months in the towns of five provinces of Cuzco, two of Puno, and one of Tacna. Since 1953 clothing has been impregnated with chlorophenothane. This requires the active collaboration of the public and the instruction of a responsible member of each family. For the control of the epidemics, the vaccination of patients and their contacts, or a whole community if the exposure to the disease was extensive and the number of inhabitants relatively small, was used. These methods have shown excellent results. Since 1950 chlorophenothane has been applied to about 155,000 persons in Cuzco as well as to their beds and clothing. In Puno the campaign was started in 1951, and 60,000 persons have been treated twice a year with chlorophenothane since then. In Tacna the campaign was started in 1952, and 10,000 persons have already been treated. Before the campaign was started the mortality rate in the zones in Cuzco later treated was 66 per 100,000 population, and the morbidity rate was 95 per 100,000; in 1951 these rates were reduced to 0.4 and 17.5 respectively; in 1952 they were zero and 0.9; and in 1953 they were zero and 1.4. In the zones in Cuzco not included in the campaign, the mortality rate before the campaign was started was 8 per 100,000 population and the morbidity rate was 42.5; in 1951 these rates were 6.9 and 22.5 respectively; in 1952 they were 16.3 and 22.1; and in 1953 they were zero and 5.4. Similar results were obtained in Puno and Tacna. No chlorophenothane-resistant lice have been reported.

Epidemiological studies show that in the rural communities of Puno 50.4% of the 1,426 persons examined had a positive complement fixation. Of 1,023 persons examined in the province of Arequipa 22.3%, and of 479 persons of rural communities in Cuzco 50% had a positive complement fixation. In 1953 vaccinations with a live avirulent strain of Rickettsia prowazekii were given for the first time to a civil population. This study is being made with the collaboration of the epidemiology department of Tulane University. About 15,000 persons have been "vaccinated," half of them with the typhus vaccine and half (as controls) with an innocuous substance. None of those receiving the vaccine and only a few of the controls have contracted typhus. About 2,000 persons had reactions to the vaccine. The intensity of these reactions was about midway between those produced by smallpox and those produced by typhoid vaccine.

Aspiration Biopsy in Breast Tumors.—Drs. J. Campos de Gastro and J. García Guiesman have reported on the diagnostic value of the aspiration biopsy of breast tumors in 80 patients studied from June, 1952, to April, 1953, in *Anales de la Facultad de Medicina*, number 2, 1953, page 204. In 42 of the patients the diagnosis was malignant tumor, in 30 no malignant cells were found, and in 8 the cytological findings were borderline. In 32 of the 42 patients with supposed malignant cells, a surgical biopsy was obtained, and this confirmed the diagnosis previously made in 30. Of the 10 patients on whom no surgical biopsy was performed 5 died of breast cancer. In 15 of the 30 patients in whom aspiration biopsy revealed no malignant cells a surgical biopsy was done, and in 5 malignant disease was found. In the remaining 15 no malignant cells developed in the follow-up period. In seven of the eight patients with borderline cytological findings surgical biopsy revealed no malignant cells; no definite diagnosis was made on the eighth. The authors believe that aspiration biopsy is a valuable aid in the diagnosis of tumors of the breast but that the surgeon must work in close cooperation with the pathologist if the best results are to be obtained.

GOVERNMENT SERVICES

AIR FORCE

Personal.—Col. Robert J. Benford, M.C., U.S.A.F., editor, *U. S. Armed Forces Medical Journal,* presented a paper, "The Development and Growth of Aviation Medical Literature," at the annual meeting of the French-speaking branch of the Aero Medical Association in Zurich, Switzerland, Sept. 21. He also represented the Department of Defense at the Fifth International Medical Journalism Meeting of the World Medical Association in Rome, Italy, Sept. 30. Before returning to the United States on or about Oct. 4, Colonel Benford will visit Army, Navy, and Air Force headquarters in Germany to stimulate contributions to armed forces medical publications.

ARMY

Leprosy Survey in South Korea.—According to the Monthly Civil Affairs Summary signed by Col. Ralph V. Plew, M.C., U.S. Army, chief of the public health branch in South Korea, a survey was made during May and June in which it was found that in 15 leprosariums there were about 15,764 persons with leprosy. In 22 colonies there were 3,639 persons with leprosy who were more or less self-supporting. Outside of these institutions and colonies there were 1,227 persons with leprosy. There are seven preventoriums housing 480 noninfected children of parents who have leprosy. Three hundred thirty-six children with no sign of infection were still living with their parents in leprosaria. All children were under 16 years of age. These figures were said to be considerably lower than previous figures as quoted by the Korean Ministry of Health and were believed to be a more accurate picture of the numerical status of persons with leprosy in South Korea.

NAVY

Personal.—Capt. Cecil L. Andrews, M.C., has been assigned as director of the professional division, Bureau of Medicine and Surgery, Washington, D. C., succeeding Capt. Lloyd R. Newhouser, who was placed on the retired list after more than 30 years of active service.

VETERANS ADMINISTRATION

Veterans Compensation and Pension Payments Increased.—Nearly 3,300,000 veterans and certain dependents of deceased veterans will receive a 5% increase in monthly compensation and pension payments effective Oct. 1, 1954, under two bills recently signed by the President. Flat increases in excess of 5% were granted to widows and dependent parents of wartime veterans whose deaths were attributable to service.

The Veterans Administration, which said the increases will be included in checks mailed at the end of October, requested veterans and dependents not to write to the agency concerning the increases, because they are payable automatically.

The VA explained that compensation is payable for service-connected disabilities or deaths and that pension is payable for non-service-connected disabilities or deaths. The Compensation Act will increase service-connected payments to 2,036,000 veterans and to 311,400 dependents of deceased veterans, or a total of 2,347,400 persons. The Pension Act will increase non-service-connected payments to 544,700 veterans and to 520,000 dependents of deceased veterans, or a total of 1,064,700 persons.

Seriously disabled veterans who have lost the use of two or more parts of their bodies are paid certain statutory rates ranging from $266 to $400. These rates are increased by the law to a new range of $279 to $420. Veterans with peacetime service-connected disabilities will receive 80% of the new wartime compensation rates. Additional compensation is payable to veterans with dependents who are rated 50% or more disabled. No increase was voted in the amounts added for dependents.

The statutory allowance of $47 provided for certain disabilities, such as loss of one leg, arm, or eye was not increased. This amount is payable in addition to the percentage disability rates that were increased. The minimum compensation rate of $67 for arrested tuberculosis also was not increased. Increases in excess of 5% were granted to widows with no children and to dependent parents of deceased veterans. Widows and dependent parents of deceased veterans with peacetime service will receive 80% of these new wartime compensation rates. Rates for widows with children and for children alone are not affected by the new law.

Personal.—Dr. John J. Blasko has resigned from the Veterans Administration to accept the position of commissioner of mental health for the state of Connecticut. Dr. Reber M. Van Matre has been transferred from the St. Louis area to the central office in Washington to be chief of psychiatric training succeeding Dr. Blasko.

PUBLIC HEALTH SERVICE

Conference on Shellfish Sanitation.—The first national conference on shellfish sanitation in almost 30 years was held in Washington, D. C., Sept. 9 and 10. The meeting, called by Dr. Leonard A. Scheele, Surgeon General of the Public Health Service, was attended by health officials of some 20 states and Canada, and about 50 representatives of the shellfish industry. Officials of the Department of State, the Fish and Wildlife Service of the Department of the Interior, and the Food and Drug Administration also participated.

While shellfish have been implicated in epidemics of typhoid fever and other enteric diseases in almost every shellfish-producing country in the world, no such epidemic has occurred in the United States since the development of the Public Health Service state-industry cooperative shellfish-sanitation program in 1925. The problem has taken on new significance since Japan, Mexico, Iceland, the Netherlands, France, and Australia have expressed interest in exporting shellfish to the United States.

Several domestic problems considered by the conference stem from new developments in shellfish production and marketing. Among these are new breading and freezing processes, the growth of communities and industries adjacent to shellfish-growing areas, and the improvement of sewage-treatment facilities in coastal regions hitherto closed to shellfish production because of actual or potential pollution.

MISCELLANEOUS

Positions Open for Medical Officers.—New examinations have been announced by the U. S. Civil Service Commission for filling medical officer positions in certain federal agencies as follows: Positions of medical officer, paying $5,940 and $7,040 a year and medical officer (specialist), paying $8,360 to $10,800 a year, will be filled in various agencies in Washington, D. C., and vicinity, and in the U. S. Public Health Service and the Children's Bureau, located throughout the United States. Positions of medical officer, paying $7,425 to $10,450 a year, will be filled in the Panama Canal Company-Canal Zone Government Organization in the Panama Canal Zone. Applicants must be graduates of a medical school and for most of the medical officer positions at the entrance level they must have completed a full internship. For medical officer (specialist) positions, applicants must have completed appropriate study or residency training in the specialized field of medicine for which application is made. Professional medical experience is required for the higher-paying positions. No written test is required.

Information regarding these positions is given in announcement 415 for medical officer, announcement 414B for medical officer in the Panama Canal Zone, and examining circular EC-27 for medical officer (specialist). These notices may be consulted at most post offices or copies may be secured from the U. S. Civil Service Commission, Washington 25, D. C. Applications for positions in agencies in the United States must be filed with the commission's Washington office. For positions in the Panama Canal Zone, send applications to: Board of U. S. Civil Service Examiners, Balboa Heights, C. Z.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACTS

Compensation of Physicians: Unauthorized Services Rendered to Minor Child.—This was an action to recover the value of medical services rendered to the child of the defendant parents. From a judgment for the parents, the plaintiff physician appealed to the superior court of New Jersey, appellate division.

A member of the bar employed a housekeeper whose son was courting the child of the defendants. The defendants' daughter was therefore seen frequently at the attorney's home while visiting her fiancé's mother. On one such occasion the attorney fortuitously observed that Barbara was scarcely able to walk, and he discovered that her foot and ankle were exceedingly swollen and conspicuously discolored. He elicited from her the information that she had sustained the injury two or three days previously while playing basketball at the high school and that her parents deemed the painful injury to be nothing more than a sprain, hence they declined to provide her any medical aid. The attorney, in the exercise of good judgment, promptly dispatched his housekeeper, her son, and Barbara to the nearby office of the plaintiff, who by means of x-rays discovered that a bone of the foot had been fractured. A cast was applied. Barbara was thereafter obliged to use crutches until the removal of the cast a month or so later. Barbara resided with her parents, and the presence of the cast and the use of crutches must have been apparent to them. Upon completion of his services the plaintiff rendered a bill to the parents in the sum of $45, which they refused to pay. At the trial to recover the value of the plaintiff's services, the plaintiff testified that, had not proper medical care and attention been devoted to the injury at the time, permanent injury would have resulted. He frankly acknowledged, however, that he had not been consulted or employed by the defendant parents. The trial court, on motion of the defendants, entered judgment in favor of the defendants on the ground that they had not authorized the rendering of the services to their daughter.

In view of the nature of the injury and the refusal of the father to provide medical attention, there is no hesitation in classifying the care and treatment given in the exigent circumstances of the present case as a necessary. The fundamental question, however, said the court, is whether in the existing law of this state an action is maintainable against a father or mother for the reasonable cost of necessaries furnished by another to their infant child in their custody unless the parent has expressly or impliedly authorized the expenditure on his or her credit. In a very early New Jersey decision, said the appellate division, it was held that a parent is bound to provide his infant children with necessaries; and if he neglect to do so, a third person may supply them, and charge the parent with the amount. But such third person must take notice of what is necessary for the infant, according to his situation in life; and where the infant lives with his parent, and is provided for by him, a person furnishing necessaries cannot charge the parent. When the infant is sub potestate parentis, there must be a clear and palpable omission of duty, in that respect, on the part of the parent in order to authorize any other person to act for, and charge the expense to, the parent. This early decision, the court pointed out, had been followed on numerous occasions by the highest court in the state. Although the appellate division felt that in this case the following of such precedent created an injustice, it "reluctantly" affirmed the decision of the trial court. *Greenspan et al. v. Slate et ux., 92 A. (2d) 47 (New Jersey, 1952).*

THE LEISURE CORNER

GUN COLLECTING

The old West is dead; the American frontier has all but vanished. Yet there are now in this country more than 500,000 men, women, and children who still carry guns . . . carry them, repair them, mount them, and in many cases shoot them. These are the gun collectors of America, a fast-growing fraternity who have more than doubled since World War II and today outnumber all the sheriffs, deputies, saloon keepers, and banditti of the Jesse James era. According to John T. Amber, editor of *The Gun Digest*, physicians are in the vanguard of this new American call to arms. Amber, who knows hundreds of gun collectors in person, estimates that more than 5,000 physicians own gun collections and that many hundreds of them are important officials in the numerous gun clubs that are now springing up all over the country.

What does gun collecting offer as a hobby? First, but not necessarily foremost, is the lure of the sudden discovery, the fabulous find that will put you on Easy Street, or at least in cigarettes, for the rest of your days. Old guns, like foreign postage stamps, can suddenly become incredibly valuable; and it is often just a tiny proof mark or inscription that can make all the difference. Take, for example, the case of the "Winchester 73." A famous and historically important weapon—some experts have even called it "the gun that won the West"—up to a few years ago it was valued at between $75 and $100, a hearty sum but hardly a fortune. Then a gun collector named Bill Depperman conducted a special study of the "73" and discovered that it occasionally, very occasionally, bore a special inscription burnished into the barrel: "One of One Thousand" or "One of 1,000." Further digging at Winchester revealed that the company had added this description to guns proved by factory testing to be exceptionally accurate. Of 700,000 rifles produced, only 150 bore the now famous legend. Within days the hunt was on, as rifle enthusiasts all over the country bid up the prices . . . from $100 to $300 to $1,000 to $2,000. Today, if you happen to find a Winchester "73" in good condition with the words "One of One Thousand" cut into the barrel, take it rapidly to your neighborhood gun dealer. You will be offered anywhere from $5,000 to $7,500.

But to most "gun-men" there are even richer historical than financial rewards. The gun collector does not only read about early American history; he actually holds, and in many cases shoots, the pre-Revolution long rifles and smooth-bore Brown Besses that won both independence and the West. He relives early frontier days with a Colt or Remington strapped to his side, fighting off the muzzle-loading trade guns of the Indians or the pearl-handled derringers of the gamblers. He is equally familiar with the Winchesters of the plainsmen, the Springfields of the cattle herders, and the bone-crushing Sharps rifles of the buffalo hunters. Many hobbyists specialize within one era or field of history. One gun-collecting physician, for instance, has picked out the mildly grisly specialty of assassination guns and can describe every detail of the cap and ball pistol that killed Lincoln, the Iver Johnson revolver used to murder President McKinley, and the Thompson submachine gun that ended the life of "Kingfish" Huey Long. In tracking down the facts of the strange assassination of President James Garfield by the disappointed civil servant James Guiteau, he came up with the following virtually unknown story:

The President, minutes after the shooting, was rushed to the executive mansion, where he remained on the razor's edge between life and death for many weeks. The great medical difficulty was finding the bullet, and no one dared to attempt exploratory surgery. Finally a young scientist was permitted to try a new instrument on Garfield. Called the induction balance, it was designed to locate the exact position and depth of the bullet by sound. After a few minutes the inventor told the assembled surgeons not only where he thought the bullet was but that it was "somewhat flattened." After a hurried conference, the eminent medical men decided to let the young man go. Garfield died; autopsy showed the bullet to be located and shaped as the young man had predicted. A final twist: the name of the young man was Alexander Graham Bell!

Thus does the study and collecting of old guns lead to the highlights and sidelights of American history.

Of course, the really great guns of the past—the pistol that killed Hamilton, or Buffalo Bill's favorite pistol, for example—are not available to the ordinary collector unless he happens to be possessed of a couple of hundred thousand dollars. For this reason, the American Weapons Corporation has for the last few years been putting out inexpensive replicas of the guns that played dramatic roles in history. Current favorites include Billy the Kid's "Lightning" and Jesse James' "Peacemaker." The gun hobbyist need not limit himself to American firearms, and a large minority specialize in European weapons. These collectors can talk for hours about a beautifully chiseled wheel lock or snaphaunce by one of the Cominazzi of Brescia, an ivory German pistol of the 16th century, or a masterwork by Napoleon's world-celebrated gunmaker, Boutet. The house of gun collecting obviously contains many rooms, all of them fascinating, and at this point you may be tempted to rush off to your local gun shop. Therefore, an important word of caution. Most would-be gun collectors enthusiastically jump in with both feet and end up by getting drowned either in debt or in worthless iron.

Expert John Amber describes the evolution of the average beginner this way: "The spell is upon him. Wife, family, job and aspirations all take a back seat as he garners guns with great abandon from every era, nation and source he can get his hands on. He neither investigates nor examines. He is a member of no gun clubs and owns no gun catalogues. But he does listen with eagerness to every tall tale that is foisted upon him. He's already bought 'Jesse James' favorite Remington,' and is now working on Wyatt Earp's legendary Colt 44. Then suddenly one morning he wakes up, and it is all over. He has on his hands a small folder of bills and a large bushel basket full of assorted rusty objects. At this point he can take one of two courses: (*A*) call in the junk man and take up golf or (*B*) go about gun collecting in a sensible way." In order to help others along this latter path, Amber, who owns 675 guns himself, puts forward these five basic tips:

1. Read about guns. There are literally hundreds of books on antique and modern guns, and you should dip into a number of them before actually buying anything. Two volumes are absolute musts: Chapel's "The Gun Collector's Handbook of Values" and *The Gun Digest*. Chapel's work was last revised in 1951, so the values are not quite up-to-date, but they will give you a first-rate idea of just what guns are worth. *The Gun Digest* comes out every year and includes a directory of all gun dealers, a gun book review section, and more than 30 articles on virtually all phases of gun collecting. So much for background.

2. Join gun clubs. Right now there are more than 30 important arms associations in the United States. Join your local chapters; go to meetings; study the arms exhibited; talk to other members; listen plenty; and above all, don't buy yet.

3. Pick a specialty. Concentrate within a small area first and then work outward. Some collectors pick a historical period, such as the Civil War or the American Revolution. Others choose a particular weapon. But even here the picture can get pretty complicated; for instance, under "Colts" the current *Gun Digest* lists four separate categories: Colt percussion revolvers, Colt cartridge pistols, Confederate Colts, and Colt shoulder arms.

4. Don't send money. At this point you are ready to choose—but not to buy. This goes particularly for sales through the mail. Reputable dealers, which means 98%, will advertise one of two arrangements, both highly favorable to you: (1) purchase on three to seven day approval (during this period you can return the weapon and receive your money back) and (2) express collect with examination privileges, allowing you to inspect the arm in the express office.

5. Consider condition. Most beginners, once they have finally captured the gun of their choice, reach for their wallet or checkbook. Naturally, each gun should be carefully inspected from stock to muzzle to determine just how it compares with other firearms of like date and type. To make this job easier, the current edition of *Guns* describes four conditions: *fine*—55% of original factory finish, perfect working order; *good*—some wear but no abuse, good working order; *fair*—scratches and bruises but still in working condition, although some original parts may be replaced; and *poor*—permanently out of order and badly cracked or rusted; should neither be sold nor bought. Attention to these points will help you get not just the right gun but the right gun in the right condition.

To the medical man, gun collecting can be a real hobby, not an occasional puttering around in the workshop or study. Unquestionably it takes time, money, and concentration, but it offers excitement, suspense, and an opportunity to relive great sections of the American and world past. A hundred years ago, the average physician regularly carried a well-oiled Colt or derringer. Today, many physicians have the very same guns, but now they are carefully and handsomely mounted in the den, garage, or office waiting room. All in all, it seems a much happier arrangement.

MEDICAL FILM REVIEWS

NEW FILMS ADDED TO A. M. A. MOTION PICTURE LIBRARY

Alcoholism: 16 mm., black and white, sound, showing time 22 minutes. Produced in 1953 by Encyclopaedia Britannica Films, Inc., Wilmette, Ill., in collaboration with Seldon D. Bacon, Ph.D., Yale Center of Alcohol Studies, and Raymond G. McCarthy, Yale Plan Clinic. Procurable on loan (service charge $2) from Committee on Medical Motion Pictures, American Medical Association, 535 N. Dearborn St., Chicago 10.

The story of Ed Grimer, an alcoholic whose illness has become more and more serious during the previous 10 years, is told in this film. His periodic drinking sprees eventually cause the breakup of his home and the loss of his job. A detailed character study, tracing the subject's personality development from childhood, is presented, and the film describes, in vivid dramatic scenes, the tension that builds up within Grimer and leads to an alcoholic "bender." Milestones in his path to alcoholism are illustrated: "sneaking" extra drinks, memory blackouts, morning drinks, and hang-overs. After his wife leaves him, Grimer becomes a patient in the public clinic for alcoholics, and the film traces, step by step, his gradual recovery and eventual reunion with his family. The film discusses other types of alcoholics in addition to the type represented by Ed Grimer and notes that different persons require different treatment. The role of Alcoholics Anonymous in combating alcoholism is discussed. The film emphasizes the need for increased treatment facilities and ends with a plea for better understanding of alcoholism as an illness. The actors are convincing, the episodes portrayed are extremely real, and no efforts are made to bolster the social and psychological arguments with inaccurate physiological information. The message of the film is given in a direct manner, and anyone of any age or degree of preparation is able to draw from it as much as matches his capacity for understanding. The photography and narration are well done. The film would be of interest to almost any audience, including physicians and scientists; it is especially recommended for high school elementary school classes in health education.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Recognition of Disturbances in Acid and Basal Metabolism of Organism: I. Definitions, Theory, Manner of Computation, Method of Analysis and Normal Values. II. Value of Laboratory Analyses in Diagnosis. III. Problems Concerning Treatment of Disturbances Together with Attempt of Organism at Own Regulations. P. Astrup. Ugeskr. læger 116:758-771 (May 20) 1954 (In Danish) [Copenhagen, Denmark].

The terms are discussed that in Astrup's opinion are today the most suitable with reference to disturbances in the acid-base regulation of the organism. Brønsted's definitions of acids and bases are approved. Simultaneous measurements of the pH in the blood and the total carbon dioxide content in the plasma show that clinical evaluation of disturbances in acid and basal metabolism only by measurement of the total carbon dioxide in the plasma is insufficient. Examples illustrate the clinical value of differentiation between the respiratory and nonrespiratory (metabolic) components in the individual cases. The disturbances in acid and basal metabolism are considered with regard to the organism's own pH regulation and to treatment. Treatment calls for correction of the primary cause and for support of the efforts of the organism to maintain a normal pH in the blood.

Clinical and Experimental Studies of Cocarboxylase Action in Thyrotoxicoses. A. Picco and G. Dogliotti. Minerva med. 45:1015-1022 (April 14) 1954 (In Italian) [Turin, Italy].

Intramuscular injections of 1 mg. of thyrotoxin daily for 10 days to a group of rabbits produced increased blood levels of sugar and pyruvic acid together with lesions in the parenchyma of the liver and the thyroid. The combined administration of thyrotoxin and cocarboxylase (Bioxilase) to another group of rabbits kept these values normal or almost normal and indicated that the co-enzyme inhibited the toxic action of thyrotoxin and had a protective action on both the liver and the thyroid gland. Picco and Dogliotti used cocarboxylase to treat 12 patients with thyrotoxicosis of various degrees. The blood pyruvic acid level was elevated in all of them. It ranged from 1.10 mg. per 100 cc. to 1.80 mg. per 100 cc. Four patients with classic symptoms of toxic diffuse goiter (Basedow's disease) had the highest levels. Most of the patients received two 50 mg. injections of cocarboxylase intramuscularly each day for ten days. After the treatment the pyruvic acid level was normal or almost normal. The basal metabolism rate dropped markedly; tachycardia decreased; the mean pressure became normal; and functional disorders, such as insomnia, hyperexcitability, and vasomotor attacks, improved. The eye symptoms remained unchanged. Four of these patients received the preparation preoperatively. All four improved and underwent the intervention without toxic manifestations or complications. In explaining the mechanism of action of cocarboxylase, the authors say that patients with thyrotoxicosis have a cocarboxylase deficiency. This is the result of the altered carbohydrate metabolism caused by the impairment of the hepatic parenchyma that is always present in these patients. This deficiency is evidenced by the pyruvemia and its return to normal after the administration of cocarboxylase. Besides restoring to normal the altered carbohydrate metabolism and protecting the liver, this co-enzyme has a beneficial effect on the thyroid tissue. Because of its particular tropism for nervous cells, it may also exert an indirect action on the activity of the gland.

Osteomatosis (Leontiasis Ossea): Hereditary Disease of Membranous Bone Formation Associated in One Family with Polyposis of the Colon. H. P. Plenk and E. J. Gardner. Radiology 62:830-840 (June) 1954 [Syracuse, N. Y.].

A striking coincidence of polyposis of the colon and multiple osteomas was found in 6 living members of a family group of 64; 6 deceased members displayed a similar association of the two diseases. The facial and cranial bones were involved in this order of frequency: maxillae, mandible, ethmoids, sphenoids, frontal bone, parietal bone, and zygoma. The changes varied from localized, eburnated, well-defined tumors to diffuse alteration of the architecture of an entire bone. Bowing, thickening, and undulation of the cortex of long bones was observed in three cases. True cortical tumors of long bones appeared in one patient. The hereditary pattern of the two conditions, polyposis and osteomas, is suggestive of a single dominant gene's being responsible for both disorders. All tumors arose from bones that are solely or predominantly preformed in membranes. The changes in the long bones were confined to periosteal bone formation. These two observations suggest that a disturbance of membranous bone formation leading to neoplasia is the basis of this disease. The term "osteomatosis" is suggested as preferable to leontiasis ossea, since it describes the condition more accurately and emphasizes the similarity to polyposis of the colon.

Thomson's Syndrome (Poikiloderma Congenitale). G. B. Sexton. Canad. M. A. J. 70:662-665 (June) 1954 [Toronto, Canada].

The occurrence of Thomson's disease (poikiloderma congenitale) is reported in five children between the ages of 3 and 10 and in a 36-year-old man. The first two children were sisters who had four other siblings who were normal. The parents of these two patients were third cousins, second generation descendants from ancestors born in Alsace and Lorraine, and appeared to be in excellent health. The third child patient was a boy, an only child and born two weeks prematurely. The last two children were brothers; one of the two had a normal twin brother. The ancestors of the father of the last two children were Americans, but the mother traced her ancestors back to Alsace and Lorraine. The five children and the one adult patient had all the features of Thomson's syndrome, namely: development of lesions in early infancy on the traumatic areas of predilection (face and arms) with telangiectasia, pigmentation and fine atrophy, scant hair, loss of eyebrows, hyperkeratotic changes, and bone deformities. Bilateral cataracts developed at the age of 5 in three patients. The three others have yet to pass the age of incidence for the onset. The additional features of a transient phase of sensitivity to sunlight with bullous formation, small stature, stubby fingers, and consanguinity, only added to the complexity of the syndrome. A familial aspect was observed in three of the families involved. The author's adult patient had, in addition to the basic features of Thomson's disease, hypothyroidism and elevated 17-ketosteroids with infantile testicular development and sterility. The almost complete absence of sweat glands and hair follicles with dystrophy of the large toe nails could conceivably place this patient in the congenital ectodermal group. Failure to utilize vitamin A suggested a vitamin A deficiency on a metabolic base. These observations seem to enhance the assumption of Carleton that one has to deal with a single complicated syndrome that may vary from the full-blown complexity described in Bloch's case, progressing through the less severe stages described by Rothmund and Seefelder and likewise observed in the children reported on by the author, to the simplest form as recorded by

---

The place of publication of the periodicals appears in brackets preceding each abstract.

Periodicals on file in the Library of the American Medical Association may be borrowed by members of the Association or its student organization and by individual subscribers, provided they reside in continental United States or Canada. Requests for periodicals should be addressed "Library, American Medical Association." Periodical files cover 1945 to date only, and no photoduplication services are available. No charge is made to members, but the fee for other borrowers is 15 cents in stamps for each item. Only three periodicals may be borrowed at one time, and they must not be kept longer than five days. Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors, and can be obtained for permanent possession only from them.

Thomson. Sex predilection in favor of the female has been reduced with the addition of the author's patients, and may be proved not to exist. The term Thomson's syndrome with the appendix poikiloderma congenitale would preserve the fundamental features originally described by Sidney Thomson and allow the inclusion of any variants herein described or subsequently to be reported.

SURGERY

The Problem of Massive Gastro-Intestinal Hemorrhage from an Undetermined Source. H. K. Gray, W. C. Shands and C. Thuringer. Ann. Surg. 139:731-737 (June) 1954 [Philadelphia].

Differences of opinion in regard to the management of patients with indeterminate gastrointestinal bleeding at the time of laparotomy led to a review of 48 such patients operated on at the Mayo Clinic during the 10 year period from 1937 through 1946. Those in whom the results of abdominal exploration proved normal or in whom a surgical procedure other than one on the gastrointestinal tract was performed constituted one group (series A) and those subjected to partial gastric resection when careful examination of the stomach, esophageal hiatus, duodenum, and small intestine failed to show the source of the bleeding constituted another (series B). Follow-up showed recurrence of massive hemorrhage within five years in 63% of the 28 patients in series A as compared with recurrence in only 11% of those in series B. Analysis of factors relating to the number of preoperative hemorrhagic episodes and the age of the patients indicated that, unless a partial gastrectomy is performed, bleeding is more apt to recur in the younger patients than in the older ones. Laboratory examination of the removed portion of the stomach and in some instances a small rim of duodenum revealed a definite lesion from which the hemorrhage might have started in 8 of the 20 specimens. These lesions consisted of a small, active gastric ulcer in four, a duodenal ulcer in one, chronic gastritis with areas of mucosal ulceration and hemorrhagic areas, noted by the pathologist, in two, and a healed gastric ulcer in one. Varying degrees of chronic gastritis were found in the other 12 specimens, but in none was it possible to incriminate a specific area as the possible site of the hemorrhage. Partial gastrectomy seems, however, to be fully justified when the source of massive gastrointestinal hemorrhage cannot be determined at the time of operation.

Frozen Homogenous Bone Grafts: Study of 620 Patients Treated with Bone Bank Material. A. Sicard and R. Mouly. Presse méd. 62:865-866 (June 5) 1954 (In French) [Paris, France].

Frozen homogenous bone grafts, though inferior to fresh autogenous ones, can be used successfully in so many operative procedures, some of which would be impossible without them, that the establishment of bone banks may be considered essential to the future of orthopedic surgery. Evaluation of the results obtained in 527 patients with a follow-up of from six months to five years showed that fusion of the frozen homogenous grafts with the bony tissues of the host was complete in 414, while in 113 it was either not secured or was only partial. Partial fusion of the graft in lumbosacral arthrodesis, however, though considered a failure from the biological point of view, was often sufficient to restore function and, therefore, might have been considered clinically successful. The percentage of failures for the series as a whole was disproportionately increased by the large number of patients subjected to this procedure (321), which, regardless of the technique employed or the material used, is probably followed by more failures than any other ankylosing operation. Failures in all other cases (206) amounted to only 14%. Tolerance for the frozen homogenous bone was excellent, except for local postoperative complications in 22 patients (3.5%), in 21 of whom the graft failed. Radiological examination shows that while fusion begins to be evident in fresh autogenous grafts by the end of the second or during the third month, it does not appear in frozen grafts until the fifth or sixth month. A longer period of postoperative immobilization is therefore required when frozen grafts are used. This delay in fusion and the fact that osseous proliferation is less pronounced with frozen than with fresh grafts make the use of frozen grafts a method of necessity rather than of principle; when they are used with due regard to their limitations, however, the service they render is invaluable.

PEDIATRICS

Conditions Mistaken for Leukemia in Children. S. D. Mills. Minnesota Med. 37:444-447 (June) 1954 [St. Paul].

Mills reviewed the records of 44 children who were seen at the Mayo Clinic in the years 1949 to 1952 inclusive and who were suspected of having leukemia but who were proved to have some other condition that was responsible for the findings suggestive of this disease. All but four of this group of children were less than 5 years of age and most were 2 years of age or less. The majority of the children had an acute infection to which their blood reacted with an unusual increase in total leukocytes or lymphocytes or both. This is the so-called leukemoid reaction, which is familiar to the hematologist and the internist and which occurs in certain infections, intoxications, malignant disease, and severe hemorrhage. Pertussis may cause a high leukocyte count with a predominance of lymphocytes, and this infection was found in four children. Others had infections of the respiratory, intestinal, and urinary tracts or evidence of sepsis. Five children had infectious mononucleosis, which may easily be confused with leukemia because of the enlarged liver, spleen, and lymph nodes and because of the lymphocytic increase in the blood. Study of the peripheral blood smear for atypical lymphocytes of Downey and the presence of a high heterophil titer established the true diagnosis in these cases. Two children had "acute benign lymphocytosis," which was characterized by elevated leukocyte and lymphocyte counts. Of four children with chronic illnesses and blood changes suggestive of leukemia, one had rheumatoid arthritis, one had cortical hyperostosis, and the other two had chronic disorders of the skin. Six children had anemia classified as nutritional. All drank milk to the exclusion of meat, eggs, cereals, vegetables, and fruits. Two children with enlarged livers were found to have a hepatoma and a granuloma of the liver, respectively. In the children with miscellaneous conditions, there was one child with acquired hemolytic anemia, one with bleeding from the intestines, one with a granulocytopenia and relative lymphocytosis resulting from the toxic reaction to an antibiotic drug, one whose mother feared leukemia because he bled from the site of a penicillin injection, and one girl with a brain tumor. Other conditions that may be mistaken for leukemia in children include: (1) the collagen diseases, such as rheumatic fever, and infections such as typhoid fever, osteomyelitis, congenital syphilis, viral diseases, and fungous infections; (2) malignant neoplasms, such as neuroblastoma, with metastasis to bone; and (3) intoxications, such as poisoning from heavy metals. The author stresses that in a young child one must be exceedingly cautious in making a diagnosis of leukemia because of the extreme lability of the blood of young children in response to certain acute or chronic illnesses, intoxications, malignant diseases, and severe hemorrhage.

Myasthenia Gravis in Early Childhood. D. Macrae. Pediatrics 13:511-520 (June) 1954 [Springfield, Ill.].

Four cases of myasthenia gravis in early childhood are reported. One case was congenital; no fetal movement was exhibited, suggesting that the myasthenia had an intrauterine onset. The mother of this child had hyperthyroidism. One of the patients had a sister and possibly other siblings affected with myasthenia gravis. From the published accounts it appears that a familial history of myasthenia is considerably more prevalent in children than in adults. It is, however, concluded that a genetic factor is not involved, but that unknown environmental factors are operative. Two patients showed severe exacerbations during intercurrent infections; one of these was in complete remission between infections. The manner in which an infection results in an exacerbation is not clear. The myasthenic-like state temporarily affecting some children of myasthenic mothers is discussed in relation to myasthenia. It is concluded that the defect in myoneural transmission in myasthenia gravis is the effect of a circulating substance whose nature, source, and mode of action are obscure but that appears to be continuously or intermittently secreted. The hypothesis is advanced that this substance passes into a defective placenta but not into a normal one; this would account for myasthenic mothers having both normal and myasthenic children. While myasthenia gravis is a rare disorder, it is becoming increasingly apparent that its incidence in early childhood is considerably higher than previously suspected. Its diagnosis in children is difficult mainly because the condition is not considered. The neostigmine test should be performed more frequently than it is, since it is a less serious investigative procedure than many others, e. g., ventriculography to determine the presence of a brain tumor.

UROLOGY

Combined Electrolyte Therapy in Advanced Renal Disease Manifested by Azotemia and Acidosis. R. A. Neubauer. Am. J. M. Sc. 227:628-639 (June) 1954 [Philadelphia].

A combined electrolyte approach to the problem of uremia and acidosis consists of the administration of hypertonic sodium lactate, calcium salts, and occasionally potassium salts. Twenty patients—11 with chronic glomerulonephritis, 4 with chronic pyelonephritis, 2 with polycystic kidney disease, and 3 with hydronephrosis—were given this therapy, and all except one with glomerulonephritis showed varying degrees of improvement from slight to complete rehabilitation. The most significant chemical changes encountered were a fall in the blood urea nitrogen, a rise in the carbon dioxide combining power, and a reciprocal drop in the extracellular chloride level. It is felt that, when usually available measures fail to benefit the uremic patient, this regimen may be of value.

Multiple Renal Lithiasis in Children: Four Cases. L. D. Arrues. Sem. méd. 104:719-722 (June 3) 1954 (in Spanish) [Buenos Aires, Argentina].

Renal lithiasis in children is rare. The author reports four cases. A boy 10 years old had an occasional mild attack of pyuria and hematuria for four years. For the last two years he complained of occasional pain in the renal region, which radiated to the back on the same side. Three weeks prior to the observation, the patient had a severe attack of acute pain, vomiting, and intestinal upset that subsided after the attack. The patient was pale and was losing weight. A roentgen examination showed a normal gallbladder and several calculi in the pelvis of the kidney. Simple radiography and excretion urography revealed 12 calculi in the pelvis of the right kidney and 3 in the lower calyx, and a greatly dilated renal pelvis. The operation consisted of a posterior pyelotomy and removal of the calculi. Antibiotics were given to the patient after the operation. No complications followed. Chemical examination of the calculi showed phosphatic lithiasis. Roentgenography one month after the operation showed no more renal calculi. The pelvis was still greatly dilated. The author believes that the calculi were formed because of stagnation of the urine caused by the dilatation of the renal pelvis due to the adhesion of the upper part of the ureter.

THERAPEUTICS

Long-Term Cortisone Therapy in Rheumatoid Arthritis. F. W. B. Hurlburt and C. E. G. Robinson. Canad. M. A. J. 70:645-650 (June) 1954 [Toronto, Canada].

Of 39 patients between the ages of 20 and 60 years with rheumatoid arthritis treated with cortisone, 27 were started on an intermittent regimen and the remaining 12 were given cortisone continuously. Six of the 27 were changed to continuous maintenance dosage, usually after a minimum period of 8 to 12 months of intermittent administration of the hormone, and were included in both groups. In the early stages of the continuously treated series, cortisone was given in initial doses of 100 to 150 mg. per day and then gradually tapered down to maintenance doses. As more experience was gained, patients were started on lower doses, usually between 75 and 100 mg. Maintenance doses of 50 to 75 mg. daily were usually adequate, although occasionally higher doses were given for short periods in an effort to suppress exacerbations of the disease. Thus, in the continuous therapy group, the average dose of cortisone given per month varied from a maximum of 2.38 gm. to 1.33 gm. Of the 18 patients treated continuously, 2 received cortisone for 3 and 5 months respectively; 7 for 6 to 12 months; 5 for 12 to 24 months; and 4 for 24 to 28 months. In the intermittently treated series, an initial course was given in a sufficient daily dosage (usually 75 to 100 mg.) and over a sufficient period of time to achieve a maximal suppression of the disease process. The total dose of cortisone required was 3 to 4 gm. Booster courses were instituted whenever a recurrence of activity of the disease so indicated. These courses usually consisted of 0.5 to 2 gm. at daily doses of 75 to 100 mg. Of the 27 patients treated intermittently, 18 received cortisone intermittently for 13 to 25 months, and 9 were given cortisone intermittently for 4 to 11 months. According to the criteria of the American Rheumatism Association used in assessing the response to therapy, only 1 of the 18 continuously treated patients achieved a grade 1 response, 3 a grade 2 response, 12 a grade 3 response, and 2 a grade 4 response. Of the 27 patients in the intermittently treated group, none had a grade 1 response, 9 had a grade 2 response (major improvement), 7 had a grade 3 response (minor improvement), and no improvement or increased severity of the disease (grade 4 response) occurred in 11 patients. Although results, as judged by classification of the American Rheumatism Association, thus were disappointing, this does not reflect the over-all symptomatic response, and partial or complete rehabilitation was achieved in a significant number of patients as follows: The number of 24 unemployable patients before the institution of treatment was reduced to 6. The number of employed persons increased from 3 full-time and 6 part-time employees before therapy to 15 full-time and 12 part-time employees after therapy. There seems to be merit in either continuous or intermittent therapy in different persons. With proper selection of cases and adequate supervision, the incidence of major complications is not sufficient to render prolonged cortisone therapy dangerous. In the authors' patients, apart from varying degrees of fluid retention, psychological abnormalities were the most significant complications and these usually can be avoided by proper selection of patients.

Cortisone in Treatment of Female Pseudohermaphroditism. C. Andreoli. Minerva med. 45:1117-1128 (April 25) 1954 (In Italian) [Turin, Italy].

A diagnosis of pseudohermaphroditism due to congenital hyperplasia of the adrenal cortex was made in a 12-year-old girl who was admitted to the gynecologic clinic of the University of Turin. Besides the characteristic signs of the condition, the patient had hypertension (this had been present for at least three years) with values of 140/85 mm. Hg. The excretion of 17-ketosteroids was 19.7 mg. Celioscopy indicated the internal sexual organs to be definitely hypoplasic; these findings were confirmed several days later during an appendectomy. Some time after the operation, cortisone therapy was instituted. One intramuscular injection of 30 mg. daily brought the excretion of 17-ketosteroids to normal in about 10 days, but it rose to above the initial level when the same dosage was given every other day. When it was increased to 75 mg. every other day, the 17-ketosteroid excretion returned to normal. It was then maintained at a level of 8 mg. per day with a maintenance dose of 50 mg. every other day. The behavior of the 17-ketosteroid excretion following administration of cortisone established that the patient's condition was caused by hyperplasia of the adrenal cortex rather than by a tumor. Had it been caused by the latter, cortisone would have been ineffective. The arterial pressure dropped after a few days and remained normal for the entire six months of therapy. The patient tolerated the therapy well, and there were no side-effects. The breasts developed; hirsutism decreased, especially on the cheeks, upper lip, and legs; and menstruation occurred with a normal flow. However, the enlarged clitoris and the voice were not changed. Although cortisone does not cure pseudohermaphroditism because its discontinuance is followed by a return of the adrenal cortex to the initial condition, it inhibits the increased pituitary secretion of corticotropin (ACTH) and therefore is the treatment of choice for this condition.

Death from Corticotrophin. B. H. R. Hill and P. D. Swinburn. Lancet 1:1218-1219 (June 12) 1954 [London, England].

An immediate anaphylactoid reaction to bovine corticotropin (ACTH), which was fatal, is reported. The reaction must be considered to be nonspecific, on the evidence given by passive-transfer skin tests. A reaction after a long course of porcine corticotropin nine months earlier was undoubtedly due to anaphylaxis. Neither previous history nor direct scratch skin tests in the patient elicited any hypersensitivity to pork or beef. Death was the result of prolonged cerebral anoxia produced by the anaphylactoid state and associated circulatory collapse of 25 minutes' duration. There were no clinical signs of urticaria, angioneurotic edema, or bronchospasm before or during the anaphylactoid reaction. Necropsy findings indicated that death was directly due to anaphylactoid shock.

Treatment of Hepatitis with Infusions of Ascorbic Acid: Comparison with Other Therapies. H. Baur and H. Staub. Schweiz. med. Wchnschr. 84:595-597 (May 22) 1954 (In German) [Basel, Switzerland].

Daily intravenous infusions of 10 gm. of ascorbic acid in 1,000 cc. of isotonic sodium chloride solution were given for five days on the average to 11 patients with infectious hepatitis admitted to the medical clinic of the University of Basel between 1951 and 1952. The serum bilirubin decreased rapidly, diuresis and body weight increased simultaneously, the time of urinary excretion of bilirubin, urobilin, and urobilinogen was reduced, and the duration of dysproteinemia and of the illness was shortened. There were no undesirable side-effects. These results compared favorably with those obtained in 195 patients with infectious hepatitis who between 1947 and 1953 were treated by other methods. Of the 195 patients, 31 received 5 units of insulin subcutaneously twice daily and 50 gm. of dextrose orally, 10 were given 20 gm. of fructose (levulose) orally three times, 83 were given total vitamin preparations orally or intramuscularly, and 12 received chlortetracycline (Aureomycin), cholagogue, cholic acid, methenamine, methionine, and choline. One month was the average duration of treatment in these 136 patients. The remaining 59 patients were given daily infusions of isotonic solution of three chlorides (Ringer's solution) or isotonic sodium chloride solution with or without addition of fructose and vitamin preparations for two to three weeks. It is suggested that in addition to the virucidal effect exerted by the ascorbic acid, direct improvement of the liver function, a favorable influence on the inflammatory tissue reaction, detoxification resulting from reversible oxidizability of the ascorbic acid, improved function of the adrenal cortex, and increased diuresis may be responsible for the highly satisfactory results obtained with the ascorbic acid infusions. The increase in the patients' weight after about five infusions with ascorbic acid was striking. The primary loss of weight of the patients treated with infusions without the addition of ascorbic acid may be held against a purely diuretic effect of the ascorbic acid. Shifting of the redox potential to the negative side, prevention of splitting of the porphyrin ring to the chain-molecule of bilirubin and the resultant reduced formation of bilirubin may also play a part in the mechanism of the effect of ascorbic acid.

Advantages Derived from the Synergisms Between Hormones and Vitamins. M. Matteini. Minerva med. 45:1066-1068 (April 18) 1954 (In Italian) [Turin, Italy].

Suppositories of Vitacryn, a preparation containing 2.5 mg. of desoxycorticosterone acetate, 5 mg. of testosterone propionate, 20 mg. of vitamin E, 50 mg. of vitamin C, 4 mg. of vitamin A, 5 mg. of vitamin B_1, and 2 mg. of vitamin B_2, were used to treat four patients in poor general condition, asthenic, extremely thin, and anorexic. Three had also low blood pressure. The same preparation was given to six boys, between the ages of 8 and 15 years, who were constitutionally thin and delicate and in whom development of the sexual organs was retarded. It was given by the rectal route to some of the patients every day and to others every other day for a total of from 10 to 20 suppositories. Patients with hypertension, or a tendency to it, with arteriosclerosis even in the initial stage, and with edema were not included in the study. The treatment had a beneficial effect in both the old and the young group of patients. In the former, the general condition was improved with restoration of the neuropsychic tone, gain in body weight (one gained 8 kg.), and rise in blood pressure. In the latter, the general condition improved, body weight increased, and muscle development and growth of the sexual organs were influenced. The author ascribes these good effects to the synergistic action that occurs between the components of the preparation, namely, between desoxycorticosterone and the vitamins, and testosterone and the vitamines. In addition, these synergisms are potentiated by that which occurs between testosterone and desoxycorticosterone.

Intravenous Procaine Amide in the Treatment of Cardiac Arrhythmias. L. R. Pascale, L. M. Bernstein, H. M. Schoolman and E. F. Foley. Am. Heart J. 48:110-122 (July) 1954 [St. Louis].

Procaine amide (Pronestyl) was given intravenously to 34 patients between the ages of 21 and 80 with 41 episodes of paroxysmal tachycardia. The drug was administered at a maximal rate of 100 mg. per minute, but no arbitrary limit was set for the total dosage. The limitation of the total dose was determined by the electrocardiographic and clinical response of the patients. The electrocardiogram was under continuous observation, and tracings were recorded after the administration of each 100 mg. of procaine amide. Twelve patients had 13 episodes of supraventricular tachycardia, 8 had 8 episodes of auricular flutter, and 14 had 20 episodes of ventricular tachycardia. Procaine amide was effective in 10 (77%) of the 13 episodes of supraventricular (auricular or nodal) tachycardia. Seven of these 10 were converted to sinus rhythm with 500 mg. or less of the drug, the other three requiring doses of 800, 1,000 and 1,400 mg. Procaine amide in doses ranging from 700 to 3,000 mg. was ineffective in terminating the eight episodes of auricular flutter. In all of the 20 episodes of ventricular tachycardia the ectopic focus was suppressed with procaine amide in doses ranging from 300 to 2,500 mg. Hypotension and widening of the QRS complex were noted. Hypotension was controlled by infusions of levarterenol (*l*-nor-epinephrine). Convulsions and death occurred after procaine amide therapy in one patient with auricular flutter. Intravenously administered procaine amide has no place in the treatment of this arrhythmia because of the failure to convert the auricular flutter and the danger of sudden deleterious increases of ventricular rate. Procaine amide is an excellent agent in the treatment of paroxysmal ventricular tachycardia. Much larger doses than the usually recommended 1,000 mg. of the drug may be necessary to terminate the tachycardia, and this may be accomplished by the use of levarterenol to correct hypotension as it occurs.

Experimental Use of Methyl-3-Chromone as Basic Treatment of Angina Pectoris. P. Soulié, P. Chiche, J. Carlotti and J. Baillet. Presse méd. 62:847-849 (June 2) 1954 (In French) [Paris, France].

The authors treated 45 patients who had angina pectoris with methyl-3-chromone. Each patient was given a placebo for 10 days before treatment with the drug was started. Improvement occurred in 22.2% of the patients during the period of placebo administration. Since the over-all amelioration was 71%, it appears that methyl-3-chromone can benefit 50% of patients with angina pectoris. In almost every case of improvement during drug therapy, the result was checked by a second period of placebo administration during which the patient's condition deteriorated. It appears that patients react differently to methyl-3-chromone depending on whether their reactions to the effort test are positive or negative. Of 16 patients whose reactions were positive, only 31% were improved by the drug, as against 58% of 29 patients whose reactions were negative. With the dosage employed (0.1 gm. given three or four times a day), one case of drug fever with an itching skin rash was encountered, which cleared up immediately the drug was stopped. A common side-effect of methyl-3-chromone was nervousness and insomnia; this was easily controlled by moderate doses of phenobarbital. The authors observed no toxic manifestations in the blood or kidneys.

Treatment of Hypertensive Emergencies: Use of Veriloid-in-Oil Intramuscularly. R. V. Ford, W. R. Livesay, C. Spurr and J. H. Moyer. Am. Heart J. 48:123-129 (July) 1954 [St. Louis].

The authors administered intramuscularly alkavervir (Veriloid) in oil to 24 patients between the ages of 34 and 58 with hypertension. The initial dose of the drug was arbitrarily selected as 2 mg. in most patients and the subsequent doses were adjusted upward in 2 mg. increments until a blood pressure response was observed. Then 0.5 mg. increments were used until an optimal blood pressure response was obtained. The initial doses were usually administered at 24 hour intervals. It was necessary to use atropine in a few patients to combat excessive bradycardia, and in several patients phenylephrine (Neo-Synephrine) hydrochloride or arterenol (nor-epinephrine) were used because of excessive reduction in blood pressure. A satisfactory hypotensive response to an optimal dose, i. e., a reduction of the recumbent blood pressure to 150 mm. Hg systolic and 100 mm. Hg diastolic without prohibitive side-reactions, was nearly always obtained in patients who received an optimal dose of alkavervir in oil intramuscularly. The optimal dose of the drug varied from 1.5 mg. to 7 mg. with an average of 3.5 mg. The average onset of action was 114 minutes, and the average duration of action was 366 minutes. Symptoms of hypertensive crisis were improved in 13 of the 24 patients and were unchanged in the remainder of the patients. There was no evidence of insufficiency in the cerebral or coronary circulation associated with the reduction of the blood pressure. One patient received a suboptimal dose and died before the use of a clinically effective dose. Two patients with uremia showed progression of the renal insufficiency as the blood pressure was reduced and one of them died. Thus, the results with alkavervir in oil given intramuscularly were quite similar to those obtained with intramuscular aqueous alkavervir except that the duration of action was longer with the depot-type form, necessitating less frequent administration. Since nausea and vomiting are the most frequent distressing side-reactions to alkavervir in any form, and, since these occur predominantly during the acute phase of blood pressure reduction immediately after the drug administration, it is only reasonable that a slower and longer-acting form of alkavervir would be associated with less nausea and vomiting. Both aqueous and depot alkavervir have the disadvantage of a less consistent and reproducible effect than does intravenous alkavervir which, however, has the distinct disadvantage of requiring constant supervision of the infusion rate. It is, therefore, recommended that the patient with a hypertensive crisis, in the absence of constant supervision, receive intramuscular injections of alkavervir in oil at 12-hour intervals, beginning with 2 mg. and adjusting the dose upward or downward with 0.5 mg. increments until an optimal dose has been established. Once this dose has been achieved, the time interval may be adjusted to give maximum hypotensive coverage, remembering the latent period between administration of the drug and onset of its effect.

Reserpine (Serpasil) in the Treatment of Hypertension. W. Hughes, E. Dennis, R. McConn and others. Am. J. M. Sc. 228:21-35 (July) 1954 [Philadelphia].

Reserpine (Serpasil), a pure alkaloid of Rauwolfia serpentina was given orally to 62 unselected ambulatory patients with mild to severe hypertension. The initial dose of reserpine was usually 1 to 2 mg. per day given in divided doses after each meal and at bedtime. If excessive sedation occurred, the dose was temporarily decreased, and after several weeks it was again increased to the previous level. If no reduction of blood pressure was observed after two weeks, the dose of reserpine was progressively increased until as much as 1.5 mg. was given four times daily (or a total of 6 mg. daily) to some patients in an effort to obtain maximum effectiveness. The patients were treated for 1 to 7 months. They were divided in two groups, one of which comprised 34 patients with an average diastolic pressure of more than 120 mm. Hg before the start of the treatment, and the other comprised 28 patients with an average diastolic pressure of more than 100 but less than 120 mm. Hg. Approximately half of the patients treated obtained a significant reduction in blood pressure. All but two of the patients who became normotensive were from the group of patients with less severe hypertension. The patients who were treated for one to two months obtained just as good results as those who received the drug for two to seven months. There were no serious side-effects. Doses of 1 to 3 mg. of reserpine in 100 cc. of 5% dextrose in distilled water were administered intravenously to 17 patients. Thirteen of these patients demonstrated a significant reduction in blood pressure about one to four hours after administration of the drug, and half of them became normotensive. Although reserpine had a prominent sedative effect on the authors' patients, this effect diminished or disappeared after prolonged therapy without a concomitant increase in blood pressure; some patients showed a significant blood pressure response without sedation. Reserpine, therefore, appears to lower the blood pressure through actions other than those related to its sedative properties. There was little difference between reserpine and extracts of Rauwolfia serpentina containing multiple alkaloids when compared as to side-effects and blood pressure reduction in patients with hypertension.

Paradoxical Hormone Therapy of Mammary Carcinoma and Its Recurrences. W. Evers. Zentralbl. Gynäk. 76:268-274 (No. 7) 1954 (In German) [Leipzig, Germany].

Of 98 patients with mammary carcinoma, 80 were in stages 1 and 2 according to Steinthal's classification, 12 were in stage 3, and 6 patients had metastases after radical surgical intervention. Fifty of the 80 patients underwent radical surgery followed by roentgen irradiation and additional treatment with male hormones; the remaining 30 patients underwent radical surgery followed by roentgen irradiation but were not given hormone therapy. The total dose of testosterone propionate was 3,000 mg. on an average, given in doses of 100 mg. three times per week. The duration of treatment varied from 2½ to 3 months. Of the 50 patients who received hormone therapy, 6 (12%) had metastases within one year. Of the 30 patients who did not receive hormone therapy, 10 (33.3%) had metastases within one year. Of 30 patients in Steinthal's stage 1, who received hormone therapy, 29 (96.6%) were still alive after three years. Of the 15 women in Steinthal's stage 1 who did not receive hormone therapy, 13 (86.6%) were still alive after three years. Of 20 patients in Steinthal's stage 2 who received hormone therapy, 17 (85%) were still alive after three years, while only 10 (66.6%) of 15 women who did not receive hormone therapy, survived for three years. All 12 patients in Steinthal's stage 3 were subjected to radical surgery followed by roentgen irradiation and additional hormone therapy. Six (50%) of the 12 women were still alive after three years. Only 25% of patients in stage 3 who did not receive additional hormone therapy and were reported on in another of the author's papers, were alive three years after the radical operation. Subjective and objective improvement resulted from treatment with opposite sex hormone in the six patients who were treated for metastases after radical surgery. Of the undesirable side-effects of treatment with male hormones in large doses for prolonged periods, masculinization (hirsutism and deepening of voice) was most frequent; edema occurred in 14 (20.5%) of the 68 patients who received hormone therapy, and 3 (4.4%) had hypercalcemia. Nine of the 14 patients with edema were placed on a salt-free diet and given diuretics, and hormone treatment did have to be discontinued, while in the remaining 5 discontinuation was necessary. Nausea and vomiting occurred frequently at the start of the hormone therapy but subsided again in most patients. Hormone treatment causes a hormonal change in the organism and may be used as an adjuvant to radical surgical intervention and roentgen irradiation in patients with mammary carcinoma. In the presence of extensive metastases of bone or soft tissues, particularly in the presence of metastases in the lungs, hormone therapy may be preferred as primary treatment.

Compounds E and F, and ACTH in the Management of Idiopathic Thrombocytopenic Purpura. C. J. D. Zarafonetis, W. A. Steiger and S. K. Cary. Am. J. M. Sc. 228:1-15 (July) 1954 [Philadelphia].

Two male and nine female patients between the ages of 14 and 78 years with idiopathic thrombocytopenic purpura were treated with cortisone, hydrocortisone, and corticotropin. Hydrocortisone was administered orally except in one patient in whom the initial trial of this drug was conducted using parenteral injection for comparative purposes. Two patients received cortisone parenterally on one occasion each. Corticotropin was given parenterally during the operative period to three of four patients undergoing splenectomy, in order to stimulate adrenal cortical function and nullify the suppressive effect of previous hydrocortisone or cortisone therapy. Two patients with partial platelet response to orally administered hydrocortisone also received courses of corticotropin. Two additional patients received small doses of corticotropin at the termination of courses of oral steroid therapy. A rise in the number of platelets was not uniformly elicited. Three patients, two of whom received cortisone and one hydrocortisone, had little or no platelet response to the treatment, and were subjected to splenectomy. One of these patients appeared to be cured by the operation, a second had a suboptimal platelet remission, while the third had an ephemeral rise in platelets followed by pronounced thrombocytopenia. A fourth patient who had temporary platelet remisssions on cortisone and hydrocortisone therapy also appears to have been cured by splenectomy. Of the remaining seven patients, two appeared cured and in two the result is still uncertain; all four of these patients received only a single course of hydrocortisone orally. Three other patients received a total of eight courses of steroid therapy. Platelet remissions were induced on each occasion, but gradual relapse occurred following cessation of therapy. These patients may ultimately be subjected to splenectomy. Temporary or permanent platelet remissions thus were observed in 8 of the 11 patients. Clinical bleeding was controlled and capillary resistance uniformly improved by steroid therapy. There appeared to be no qualitative difference between the results achieved with hydrocortisone given orally and those obtained with cortisone. Persistently positive serologic tests for syphilis were obtained in two patients. These were shown to be false-positive through use of the treponema immobilization test. The steroids are ideally suited to the emergency treatment of idiopathic thrombocytopenic purpura. If splenectomy is deemed necessary, preoperative preparation with steroid therapy minimizes the risks associated with surgical intervention. Such therapy was continued for several days after the operation and no difficulty with wound healing occurred. Properly controlled treatment with cortisone, hydrocortisone, or corticotropin, initiated at the time of diagnosis, constitutes a conservative approach to the treatment of idiopathic thrombocytopenic purpura and is to be considered more conservative than a program of watchful waiting.

Uncommon Side-Effects Secondary to Streptomycin Therapy. G. Mechetti. Riv. pat. e clin. tuberc. 27:97-100 (March-April) 1954 (In Italian) [Bologna, Italy].

Mechetti observed the occurrence of bronchial asthma and herpes simplex in two tuberculous patients who were receiving streptomycin. Both patients had a chronic form of pulmonary tuberculosis, and clinical and laboratory tests indicated that the hepatic function was altered. The side-effects became manifest in the first patient three to four days after the beginning of therapy. *p*-Acetylaminosalicylic acid (APAS) was then given instead, and the herpetic and asthmatic manifestations disappeared gradually in 7 to 10 days. The side-effects appeared after six to seven days of therapy in the second patient who five months previously had tolerated well a total of 15 gm. of streptomycin. The use of the antibiotic was discontinued, and she was given pyrilamine (Neo-Antergan) maleate and vitamin PP therapy. After this, streptomycin administration was resumed and was carried out for 30 days with no untoward effects. Side-effects secondary to streptomycin therapy have been attributed to the toxicity of the drug, its impurities, its allergenic activity, or to a particular local and general reactivity of the patient to the drug. Mechetti believes that in his two patients the bronchial asthma was due to a varied nonallergic reactivity of the patients to the drug, and, from this, signs and syndromes clinically similar to those caused by allergic reactions developed. The herpetic manifestations were a direct consequence of the asthma attacks. These might have mobilized and rendered virulent the herpes virus that was latent in the internal organs.

PATHOLOGY

Giant Osteoid Osteoma. D. C. Dahlin and E. W. Johnson. J. Bone & Joint Surg. 36A:559-572 (June) 1954 [[Boston].

The term "giant osteoid osteoma" is suggested by the authors for an unusual and microscopically characteristic tumor that was observed in 11 of about 2,000 cases of primary tumor of bone in which a comprehensive study of pathological specimens was carried out at the Mayo Clinic. Of the 11 tumors, 4 involved thoracic and lumbar vertebrae, and in each of these a portion of the vertebral arch was destroyed and in 3 the vertebral body itself was affected. Five tumors were found in long bones, and various parts of the diaphysis of these long bones were involved. Of the remaining two tumors, one was in the upper fourth of the patella and the other had almost completely destroyed the talus. The tumors were characterized by a prominent network of osteoid trabeculae showing varying degrees of calcification and a vascular stroma that fairly frequently contained benign giant cells and little fibrous tissue. Because of their histological features the authors felt that these tumors most closely resembled osteoid osteomata, but the biological properties of restricted growth and the nonaggressiveness usually observed were lacking. The features that distinguished the authors' tumors from ordinary osteoid osteoma were the much greater size, more pronounced vascularity, more orderly pattern of larger osteoid trabeculae, a tendency to erode through the cortex, and the inconstancy of the surrounding bony sclerosis. Grossly these tumors were softer and more hemorrhagic than the usual osteoid osteoma. Of the 11 patients in whom the tumors occurred, there were 10 males and 1 female between 5 and 60 years old. All patients complained of pain in the region involved, and with few exceptions the pain was centered directly over the affected part. The duration of pain varied from three weeks to five years. After biopsy, 10 patients underwent operation for removal of a neoplastic mass by curettage. The 11th patient underwent amputation at the junction of the upper and middle thirds of the femur after biopsy and an erroneous diagnosis of sarcoma. Five patients were given a course of roentgen therapy after operation. The postoperative course of the patients indicated the benign nature of the lesions; the three most recently treated were well or improved at follow-up intervals of 12 months, 14 months, and 30 months, respectively. The other patients remained well for periods varying from 4 to 18 years.

Specificity of the L. E. Phenomenon. A. Leoni. Minerva med. 45:1022-1027 (April 14) 1954 (In Italian) [Turin, Italy].

Leoni undertook this study to evaluate the specificity of the L. E. phenomenon for acute lupus erythematosus. To demonstrate the presence of this phenomenon in the blood of healthy persons, as well as in patients with various dermatoses (psoriasis, eczema, erythema exudativum multiforme, and dermatitis herpetiformis) and subacute and acute lupus erythematosus, he followed the procedure of the English authors Eppes and Ludovic. He also determined the presence of the phenomenon in the fluid drained from the pleura or abdomen of six patients with exudative pleurisy, three with hepatic cirrhosis, and one with polyserositis. He found the L. E. phenomenon in the blood of all the persons of the first group and in the fluid of three patients with exudative pleurisy, one with hepatic cirrhosis, and the one with polyserositis. On the basis of these findings, Leoni questions the specificity of the L. E. phenomenon for acute lupus erythematosus. Marmont and Haserick have stated that it is specific for this disease. Hargraves in 1949 said, "When L. E. cells are found in a disease other than lupus erythematosus the patient has both diseases." Leoni believes the phenomenon to be nonspecific in view of the fact that he and other authors found it in the blood of both healthy persons and patients with diseases other than lupus erythematosus. He also feels that in the past many authors have mistaken findings of erythrophagocytosis and other microscopic pictures for the L. E. phenomenon. This may be partly due to the fact that a precise definition of the L. E. phenomenon has not as yet been advanced. The only valuable feature that distinguishes the pseudo-L. E. cells from the true ones is the nuclear nature of the inclusion. This can be demonstrated only with Feulgen's reaction, and unfortunately very few authors have used this test. Although Leoni believes the L. E. phenomenon to be nonspecific for acute lupus erythematosus, he says that the mechanism of its formation may be specific for the disease. With the technique of the American authors Hargraves and Haserick, the L. E. phenomenon appears only, or more easily, in acute lupus erythematosus. Studies are now in progress to test the validity of this hypothesis.

A Serum Cold Precipitable Hemagglutinating Factor in Rheumatoid Arthritis. N. Svartz and K. Schlossmann. Acta med. scandinav. 149:83-89 (No. 2) 1954 (In English) [Stockholm, Sweden].

A test common to all rheumatoid disorders would be of great value in the diagnosis of rheumatoid arthritis in its early stages or in atypical cases or in rheumatic disorders without articular symptoms, e. g., myositis. However, confusion exists in the matter of the practical applications of the hemagglutination test in rheumatoid arthritis. The authors' experiments prove that there is a correlation between a certain serum hemagglutinating factor and rheumatoid arthritis. Cold precipitable substances in the serum from patients with rheumatoid arthritis are capable of agglutinating sensitized sheep erythrocytes, and the test for this hemagglutinating factor is of diagnostic value, witness the fact that a hemagglutination titer of 1 in 16 or higher was found in 95 out of 100 patients with rheumatoid arthritis. The results of hemagglutination obtained with cold precipitates differ completely from those obtained with unfractionated serums. There exist in unfractionated serums several types of hemagglutinating substances. The same is true of serums fractionated in cold. The difference is that most of the serums that are capable of producing agglutination of sensitized sheep cells show a hemagglutinating factor only in the supernatant fluid, while in rheumatoid arthritis a hemagglutinating factor is to be found in the cold precipitate. No biological reaction is entirely specific to one disease; but the investigations here reported are the first through which the presence of a factor that may be considered nearly specific to rheumatoid arthritis has been demonstrated. In judging the test, it must be kept in mind that the agglutinating substance does not appear in the blood for at least two months.

Modifications of Islands of Langerhans Following Vitamin E Therapy. L. Barbieri and P. L. Esposti. Minerva med. 45:1324-1326 (May 9) 1954 (In Italian) [Turin, Italy].

In an attempt to evaluate the action of vitamin E on the islands of Langerhans, histological studies were made of the pancreas of animals treated with the vitamin. This was administered to four groups of guinea pigs as follows: (1) intraperitoneally in doses of 100 mg. daily for 15 days; (2) intraperitoneally in doses of 50 mcg. every other day for 23 days; (3) intramuscularly in doses of 50 mg. every other day for 23 days; and (4) intraperitoneally in doses of 50 mcg. every other day for one month. At autopsy the pancreas appeared enlarged and slightly congested. Histological studies indicated that the islands of Langerhans were few in number and not too large. The number of A cells was increased, whereas that of B cells was greatly diminished. In the guinea pigs that had received 50 mg. of vitamin intramuscularly every other day for 23 days, the B cells had disappeared entirely or very few of them were present at the periphery. From their findings Barbieri and Esposti conclude, unlike other authors, that vitamin E does not potentiate or stimulate the production of the glycoregulatory pancreatic hormone. Had the vitamin acted by stimulating the production of insulin there would have been a more or less marked increase of B cells. The presence of an increased number of A cells instead suggests hypofunction of the gland. If vitamin E does exert a useful action in certain cases of diabetes, as some authors have reported, it may be because of its peripheral action on tissues and muscles whereby through a mechanism governing the oxidation-reduction process it may favor a better utilization of glucose by the muscle fiber cell.

The Pathology of Gastric Arteries, with Special Reference to Fatal Hæmorrhage from Peptic Ulcer. G. R. Osborn. Brit. J. Surg. 41:585-594 (May) 1954 [Bristol, England].

The author studied the gastric arteries in 50 consecutive deaths from coronary thrombosis; in 45 subjects they were entirely normal. In only two were there arteriosclerotic lesions; the other three had small lesions of an inflammatory nature. It is stated that the gastric arteries at all ages are very nearly immune from the usual forms of arteriosclerosis. Arteriosclerosis cannot play any part in massive hemorrhage from peptic ulcer. No significant incidence of hypertension could be found in 26 deaths from hematemesis. In peptic ulceration the arteries may suffer chronic, acute, or subacute erosion. Chronic erosion prevents massive hemorrhage, whereas acute erosion is the typical lesion of fatal hemorrhage. The type of arterial erosion present and the course of the hemorrhage are determined by unknown factors that govern the rate of the ulcer process. A study of 8 cases of ulcer-cancer and 20 consecutive cases of gastric carcinoma revealed that chronic arterial erosion is quite common in carcinoma of the stomach. Its frequency varies in different types of carcinoma. Hemorrhagic shock must be controlled immediately, because of the danger of death from straight hemorrhage or delayed shock nephrosis. The old belief in "blowing off the clot" by transfusion is based on false pathological concepts. Acute erosion is almost certain to be fatal unless the patient is treated by subtotal gastrectomy, after adequate preparation, in the preuremic stage. There is no medical treatment for acute erosion. Many gastric ulcers with acute arterial erosion cannot be recognized at operation; this justifies blind subtotal gastrectomy. Duodenal ulcers that cannot be removed should be exteriorized to prevent recurrence of hemorrhage. One of the most striking features of the history of fatal cases is the absence of pain.

Serum Lipoprotein Stability in Atherosclerosis. L. Horlick. Circulation 10:30-42 (July) 1954 [New York].

The simple and rapid method devised by Horlick for estimating the susceptibility of persons to atherosclerosis consists of measurements of stability of serum lipoproteins with the aid of a lecithinase turbity test. The alpha toxin of Clostridium welchii was used as a potent lecithinase that disrupts the serum lipoproteins, releasing the lipoids from their protein linkage. This reaction is associated with development of intense turbidity in the serum. There is evidence that the enzyme may more specifically attack the less stable classes of lipoproteins. The time taken for turbidity to occur, after enzyme and serum were incubated under standard conditions, varied widely in the serums of different persons. Turbidity tests and serum lipid determinations were carried out on the serums obtained from a group of 50 patients with coronary disease whose average age was 57.7 years, and from two groups of normal persons; one comprised 50 persons, whose average age was 50 years, and the other comprised 131 persons whose average age was 22 years. In 36 (72%) of the 50 patients with coronary disease, the turbidity occurred early, i. e., in less than 4.5 hours, while a similar phenomenon was observed in only 11 (22%) of the 50 normal persons of similar age who served as controls and in 28 (21%) of the 131 young normal persons. The early development of turbidity in the patients with coronary atherosclerosis as compared with that in the controls suggests that in the coronary group the lipoproteins are most amenable to disruption by lecithinase and possibly less stable than in the control groups. There was no real difference in the percentage of persons with early onset of turbidity between the older and younger controls despite a considerable difference in mean age of the two groups. The atherogenic process begins early in life, and it is not surprising, therefore, that a relatively high percentage of young people show evidence of "unstable lipoproteins." The degree of final turbidity correlated moderately well with the serum lipids as measured quantitatively. Final turbidity was higher in the coronary group (mean 67.55) than in the older control group (mean 60.99) and the younger control group (mean 50.23). Final turbidity estimation may be used as a screening technique for detecting persons with abnormal serum lipid levels. Early onset of turbidity, and high final turbidity reading were present simultaneously in 32 (64%) of the 50 patients with coronary disease, in 7 (14%) of the 50 older control persons and in 8 (6%) of the 131 young control persons. The application of these criteria permits separation of persons with coronary atherosclerosis from a control population. The lecithinase turbidity test was not affected by storage of serum for seven to 10 days. Solutions of enzyme did not lose their potency for at least one month. Relatively stable values were obtained, when persons were retested for periods varying up to six months.

Behavior of Serum Iron in Various Diseases of Liver. E. R. Christian. A. M. A. Arch. Int. Med. 94:22-33 (July) 1954 [Chicago].

The iron level was determined in 659 serums obtained from 313 persons. Of the 313 persons, 50 were normal hospital employees, 28 were patients without evidence of liver disease, 42 were persons with abnormal liver function tests due to undetermined causes, and 193 were patients with diseases of the liver, the exact nature of which was established in most cases by means of needle biopsy, laparotomy, or necropsy. Of the liver diseases studied, viral hepatitis caused significant elevation in the serum iron more consistently than did any other disease except hemochromatosis. Although random elevations of serum iron occurred later in the course of viral hepatitis, maximum elevation occurred during the third week of this disease. Before the third week values tended to fall within normal range or were not sufficiently elevated to be diagnostic. Values tended to return to normal after the eighth week of the disease. In viral hepatitis the serum iron roughly parallels the clinical course; i. e., it is high during the period of greatest morbidity and decreases as the patient improves. However, there is no constant correlation between serum iron and severity of the disease. Nor is there a constant correlation between serum iron and other hepatic function tests. In most diseases of the liver associated with jaundice (unless jaundice is caused by hemolysis) it is thought that pronounced elevation of serum iron is highly indicative of viral hepatitis, especially, if values are persistently elevated. The critical serum iron level in this respect is 300 mcg. per 100 cc. It should be noted, however, that significant elevations of serum iron are not unusual in other diseases of the liver, particularly various hepatitides, and the necrotizing phase of portal cirrhosis. As a result of his experience, the author states that the increase in serum iron is roughly proportional to the extent of hepatocellular damage. Determination of serum iron is of particular value in differentiating between viral hepatitis and extrahepatic biliary obstruction, especially during the phase when hepatitis exhibits obstructive phenomena. Determination of serum iron is not proposed as a hepatic function test of such specificity that a single value assumes diagnostic importance. Rather, it is proposed as an adjunct to other function tests and liver biopsy in the investigation of hepatocellular damage. In certain diagnostic situations it may have, however, greater specificity than either other function tests or biopsy.

RADIOLOGY

Renal Complications from Aortography. G. M. Miller, E. J. Wylie and F. Hinman Jr. Surgery 35:885-896 (June) 1954 [St. Louis].

Damage to the kidney from translumbar aortography was observed in six men and one woman between the ages of 45 and 64. In three patients the damage was unilateral and resulted from direct trauma at the time of the aortography. Not only was the needle misdirected in each of the three cases, but the complicating factors of excessive injection pressure, large volumes of dye, and possible irritation by the contrast medium were also present. Pressure and volume are interrelated factors, with the medium causing damage by being forced out of the capillaries or by direct irritation because of high concentration. As a result, atrophy of the kidney occurred in one patient, and a second patient had a temporarily nonfunctioning kidney with severe hypertension that reverted spontaneously to normal within three months. High aortic block is particularly likely to dam back dye and promote renal damage. Bilateral indirect damage followed by reversible renal failure occurred after aortography in the remaining four patients. In three the two needle technique was used and over 60 cc. of dye injected. In the fourth patient, the gas-pressure machine was used; the patient appeared to have immediate parenchymal damage bilaterally. All four patients recovered completely after periods of oliguria of 10 to 11 days. Two of the four had evidence of iodopyracet (Diodrast) sensitivity; three of the four had at least 60 cc. of contrast mediums injected, and the fourth had 50 cc. injected under high pressure. Experiments made on dogs showed that high injection pressures caused interstitial extravasation of the contrast medium, leading to late renal fibrosis. Certain limitations in technique are advocated to insure against such damage after aortography. If the whole aortic tree must be filled, at least 50 cc. of dye is needed. To prevent excessive pressure, two smaller 17 or 18 gauge needles should be used, and the contrast medium should be injected by hand with two syringes. To avoid direct injection into the renal vessels, the needle tips should be angulated sharply upward so that they enter the aorta just below the diaphragm and 2 to 3 cm. above the renal vessels. Long needles are required. For urologic purposes the 25 cc. volume of contrast medium was found to be adequate. But since this quantity of dye injected directly into the renal artery, even by hand pressure, could be damaging, a scout film should be made after injection of 5 cc. of dye to determine the position of the tip of the nedle. It may then be moved should it lie within the lumen of the renal artery or mesenteric vessels or should there be extravasation. This precaution might have obviated the complications in at least three of the reported cases. These smaller volumes of contrast medium used to visualize just a segment of the aorta and the renal vascular tree can be conveniently injected with the aid of local anesthesia. The use of 70% sodium acetrizoate (Urokon), instead of 70% iodopyracet (Diodrast), as contrast medium may prevent a sudden movement by the patient from the "shock" of the injection.

Importance of Vascular Spasm in Study of Chronic Obliterating Diseases of Arteries. G. Cadili and V. Sommariva. Minerva chir. 9:342-350 (April 30) 1954 (In Italian) [Turin, Italy].

Arteriograms of the peripheral circulatory system that were taken before intra-arterial injection of nicotinic acid (Nicotene) in 20 patients with thromboangiitis obliterans (Buerger's disease) and 8 with arteriosclerotic conditions were compared with those taken before the injection. For each arteriogram 5 cg. of nicotinic acid in 5 cc. of isotonic sodium chloride solution was injected into the artery slowly in three to four minutes. The arteriograms taken after the injection revealed changes in the circulatory system that those taken before the injection had failed to show. This was especially true of the arteriograms of patients in whom the process was of recent onset. The authors ascribe the differences in the arteriograms to the fact that the arterial spasm, which may sometimes cause the circulatory deficit and consequently the anatomic impairment, was temporarily eliminated by the drug. This technique reveals the vascular lesions in their true entity and therefore a more correct diagnosis is possible. The method should be used in all patients with arterial disease of the peripheral system to secure a reliable picture of the vascular state and to institute the suitable therapy.

ANESTHESIA

Thimethaphan Camphorsulfonate (Arfonad) in General Surgery. M. S. Sadove, G. M. Wyant and G. Gleave. A. M. A. Arch. Surg. 68:779-786 (June) 1954 [Chicago].

Thimethaphan camphorsulfonate (Arfonad), a thiophanium derivative, was used in more than 200 patients for the induction of hypotension during surgical anesthesia. Thimethaphan camphorsulfonate is an ultra-short-acting agent; its effect is so evanescent that the agent must be administered in a continuous intravenous infusion if vasodepression is to be maintained. Thus the level of blood pressure may be adjusted from moment to moment by simply adjusting the rate of flow of the intravenous infusion, depending on the surgical need of the moment. Hence this method of induced hypotension may truly be termed "controlled hypotension" in contradistinction to all other methods or drugs hitherto available. If return of normal pressure is desired at a rate faster than occurs when the administration of this evanescent agent has been discontinued, a very small quantity of any of the common vasopressors will bring about the desired result. The action of thimethaphan camphorsulfonate is markedly facilitated by general anesthesia and by drugs with a vasodepressor action, such as morphine and meperidine (Demerol) hydrochloride. The deeper the plane of anesthesia the more pronounced is the response to like doses of the hypotensive agent. Like the methonium compounds, thimethaphan camphorsulfonate is potentiated by the administration of procaine hydrochloride. Neurosurgery, peripheral vascular surgery, removal of highly vascular neoplasms such as hypernephroma, operations associated with great blood loss (evisceration procedures, pancreatectomy, splenorenal shunts), control of dangerous systemic hypertension and treatment of pulmonary edema due to pulmonary hypertension are the principal indications for this new method of induction of hypotension in surgical anesthesia. Emphasis is placed on the relatively few indications of controlled hypotension in general surgery. Shock, inadequate availability of fluids, inability to replace blood for technical reasons, inadequate skill on the part of the anesthesiologist, severe disease of liver and kidneys, degenerative disease of central nervous system, severe cardiac disease, hypovolemia, uncorrected anemia, and arteriosclerosis constitute contraindications of the method. When thimethaphan camphorsulfonate is indicated, it represents a valuable aid to surgery.

Clinical Experience with Hypotensive Anesthesia. P. H. Lorhan and M. I. Miller. Am. Surgeon 20:629-636 (June) 1954 [Atlanta, Ga.].

High spinal anesthesia to effect the hypotensive state during surgical intervention was employed by the authors in 25 patients, 2 of whom were aged 89 and 64. Both men were poor-risk patients having major abdominal operations for incarcerated hernia and carcinoma of the stomach, respectively. A 2.5% solution of procaine hydrochloride in Ringer's solution and a 1% solution of lidocaine hydrochloride were used for anesthesia. Blood loss was minimal in each case and postoperative complications relative to anesthesia did not occur. The patients remained alert and oriented except when depressed with drugs. No cyanosis was observed and the skin remained warm and dry. In each patient, the blood pressure returned to the normal preoperative level. Nausea occurred in several of the other patients after the induction of the hypotensive state and during operation when vagal reflexes were elicited by traction. Postoperative hemorrhage occurred in one patient who had had a combined abdominoperineal resection and in whom shock developed. Shock was controlled with one pint of blood and recovery was without further complication. It was thus demonstrated that a few aged, poor-risk patients did tolerate hypotension remarkably well, and did not suffer any untoward effects that could be related to this type of anesthesia. These patients all recovered quickly, and all but one made excellent postoperative progress. Although this small series of cases does not prove that the hypotensive technique is without danger, the authors believe that the method may have some merit when applied to selected cases. Any patient for whom large blood loss may be anticipated is a potential candidate for the method. Also suitable is the patient scheduled for lower abdominal surgery when the Trendelenburg position is of advantage to the surgeon. Less suitable is the patient who must remain in a horizontal position or when positioning places the center of gravity below heart level. Venous return is dependent on gravity, and it would seem unwise to subject a patient to a state of hypotension unless the Trendelenburg position is used. The anemic, debilitated patient with reduced blood volume is a poor candidate for the hypotensive state. For this type of patient adequate preoperative blood transfusion is strongly recommended.

PHYSIOLOGY

A Common Dynamic Factor in Motion Sickness. C. C. Shaw. Mil. Surgeon 114:347-350 (May) 1954 [Washington, D. C.]

The forces exerted on a floating vessel (a boat, an airplane, or a balloon) constitute a dynamic system with at least six directional components, often referred to as "six degrees of freedom." The forces of the wind and the sea may displace the ship's center of gravity along three orthogonal axes fixed in space or may cause her to rotate about these axes. Oscillatory linear motions along the longitudinal, lateral, and vertical axes are termed surge, sway, and heave. Rhythmic oscillations about these same axes are termed pitch, roll, and yaw, respectively. When under way, the degree of pitch, roll, and yaw may be measured by means of inclinometers as angles of displacement from vertical and horizontal axes passing through the center of gravity of the ship. If the duration is known, the degrees of angular displacement may then be expressed as a function of linear acceleration. This is obtained by multiplying the angular accelerations by their distances from the axis of rotation, which is assumed to be at the ship's center of gravity. Surge, sway, and heave, being linear motions, imply linear accelerations. As such, they may be added to the linear components of pitch, roll, and yaw to obtain total linear acceleration. A quantitative study of the motions of a ship at sea and the incidence of sea sickness among her passengers was undertaken in 1951 aboard two vessels of the Military Sea Transport Service. This is believed to be the first sea trial in which quantitative determinations of motion in a seaway were registered by means of inclinometers and accelerometers. This undertaking may mark a milestone in naval architecture, engineering, and medicine. The mechanical or dynamic cause of motion sickness is identical on land, at sea and in the air. It is the sum of linear accelerations and decelerations along and around the longitudinal, lateral, and vertical axes. Each of the six degrees of freedom of motion may contribute to motion sickness. The linear accelerations of surge, sway, and yaw are almost negligible, and motion sickness is induced by the sum of the linear accelerations of pitch, roll, and heave. The greatest of these in a seaway is heave.

Role of Arterial Wall Secretion in the Regulation of Blood Pressure. C. Jiménez Diaz, P. Barreda, A. F. Molina and R. Alcalá. Circulation 9:903-907 (June) 1954 [New York].

A series of experiments on dogs has shown that electric stimulation of the central ends of the vagus nerves causes a release of hypertensive substance that is similar in all respects to that extracted from arterial walls. This substance is released into the blood stream, as evidenced by the activity shown by samples of blood taken during stimulation, and the hypertensive effect can be transferred to another dog in crossed circulation experiments. It appears that the substance is released from the blood vessels themselves; hepatectomy, nephrectomy, or adrenalectomy did not prevent the response. Hypophysectomy also did not prevent the response; it seems that the vagopituitary reflex that liberates vasopressin (Pitressin) is not involved here. Release of pressor material from arterial walls after vagus stimulation depends on a mechanism consisting of excitation of vasomotor centers and sympathetic outflow to the arteries. The components of the pressor material released, demonstrated by paper chromatography and characterized pharmacologically, include epinephrine and norepinephrine and at least one other unknown material. It was found that interruption of sympathetic outflow by section of the spinal cord at the sixth cervical vertebra largely prevented rise in arterial pressure due to stimulation of the vagus nerves. In some experiments, however, a small rise in pressure persisted after cord section; it is likely that this effect is due to stimulation of the cervical sympathetic trunk, which lies in the vagus sheath in the dog, with release of norepinephrine from arterial walls in the head. Another hypothesis is that these responses are caused by the release by the brain of a pressor substance, but studies on hemodynamic, respiratory, and vasomotor mechanisms are needed to complete the evidence. Vagus stimulation apparently can activate several mechanisms that modify arterial pressure. The most important seems to be the one that works through the sympathetic nervous system and releases pressor amines from blood vessels.

BOOK REVIEWS

New and Nonofficial Remedies Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1954. Issued under direction and supervision of Council on Pharmacy and Chemistry, American Medical Association. Cloth. $2.65. Pp. 609. J. B. Lippincott Company, 227-231 S. Sixth St., Philadelphia 5; 2083 Guy St., Montreal, Canada; British agent—Sir Isaac Pitman & Sons, Ltd., 39 Parker St., London, W.C.2, England, 1954.

In this volume the Council on Pharmacy and Chemistry continues its excellent work of evaluating the newer remedies and of bringing up-to-date the appraisal of those previously available. Ranging from agents used in treating allergy to vitamins, the 24 chapters of the text present a comprehensive, concise, and well-written review of the best in current drug therapy. The general statements at the head of chapters 1, 7, 8, and 22 have been expanded, and the sections on penicillin and sulfonamides have been revised and rearranged for better classification and location of information. Cross reference is consistently made to compounds that are related to the subject under discussion but are fully described in other chapters. The addition of lists of drugs added to or omitted from the current volume is a desirable innovation. Each newly accepted drug is covered in a monograph. Another innovation is the addition of the statement of physical properties to the general description of each compound. This was apparently done in some measure to replace the formerly included statements of tests and standards, which are now published in a separate volume. The index, which now appears in a double-column page, is excellent.

Surgical Forum: Proceedings of the Forum Sessions, Thirty-Ninth Clinical Congress of the American College of Surgeons, Chicago, Illinois, October 1953. Surgical Forum Committee: I. S. Ravdin, M.D., F.A.C.S., chairman, and others. Cloth. $10. Pp. 752, with 131 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1954.

This fourth volume of the proceedings of the forum sessions of the clinical congress of the American College of Surgeons is truly "bigger and better than ever" and is distinctly a "must" item for anyone desiring to keep pace with modern surgery. Major investigations into many fields of surgical endeavor are presented, and the contributions have been selected with great care. Nearly 400 surgeons have participated in compiling a subject index of over 500 items, each well written and containing the latest and most authentic information on such subjects as the heart and great vessels, blood vessels and circulation, lungs, esophagus, stomach, intestine, liver, pancreas, shock, nutrition, and electrolytes. Every surgeon should find this volume of real interest.

Elsevier's Encyclopedia of Organic Chemistry. Edited by F. Radt. Founded by E. Josephy and F. Radt. Series III: Carboisocyclic Condensed Compounds. Volume 12 B: Naphthalene. A. Compounds Containing One Naphthalene Nucleus. Naphthoic Acids and Their Halogen, Nitrogen, and Hydroxyl Derivatives. Cloth. $56 per single copy; $49 for series subscribers; $42 for set subscribers. Pp. 3965-4559; xliii; Ind. 45. Elsevier Press, Inc., 402 Lovett Blvd., Houston 6, Texas; 155 E. 82nd St., New York 28; 118 Spuistraat, Amsterdam C, Netherlands, 1953.

This volume is confined to a study of naphthoic acids and their various derivatives and homologues. In the instances of the better-known compounds, such as 1-naphthoic acid and 2-naphthoic acid, the physiological properties are reported. Reference is made in some instances to literature published as recently as 1953. Not many substances reported in this volume are known to physicians, primarily because they have not yet been established as useful in the field of medicine. Nevertheless, as a volume of an important encyclopedia of organic chemistry, this work will be frequently used by medical research men for information as chemotherapy develops and expands.

The Eczemas: A Symposium by Ten Authors. Edited by L. J. A. Loewenthal, M.D., M.R.C.P., D.T.M. & H. Cloth. $7.50. Pp. 267, with 77 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; E. & S. Livingstone, Ltd., 16 and 17 Teviot Pl., Edinburgh 1, Scotland, 1954.

In this book an international team of 10 experts records all aspects of present knowledge of eczema "incomplete though it may be." Although practically all phases of the subject are covered, the approach is almost entirely organic, with no chapter devoted wholly to psychogenic influences on eczema. The subject is adequately touched on in various parts of the book but it does not receive the emphasis accorded it in some quarters because "the subject is not yet sufficiently advanced to warrant its inclusion on an equal footing with the scientific studies presented here." With respect to the latter, an especially interesting chapter is that by Haxthousen on theoretical considerations of allergic eczema in which he discusses all of the experimental work carried out in human beings and laboratory animals on the pathogenesis of eczema. Subjects including the role in sensitization of "simple" substances, proteins, antigens, and antibodies and the part played by lymphocytes as carriers, transplantation experiments, skin reactions, specificity, and the significance of microorganisms are all discussed thoroughly. The other chapters dealing with the role in eczema of various chemicals and bacteria; other phases such as histopathology, special kinds of eczematous eruptions including nummular eczemas, hypostatic eczema, and hand-eczema are also discussed fully. The book is generously illustrated and contains an excellent section on treatment. A table indicating concentrations and vehicles to be used in patch testing is appended. There is a full index. The book is well written and practical throughout. It should interest all practitioners and students.

The Laboratory Diagnosis of Leptospirosis. By J. W. Wolff, M.D., Professor of Tropical Hygiene, University of Wageningen, Netherlands. Publication number 183, American Lecture Series, monograph in American Lectures in Tests and Techniques. Edited by Gilbert Dalldorf, M.D., Director, Division of Laboratories and Research, New York State Department of Health, Albany. Cloth. $3.75. Pp. 99, with 5 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1954.

This little manual deals with one of man's diseases transmitted from rodents and domestic animals. It is now known that many serologic types of leptospira that are not morphologically and culturally distinguishable from Leptospira icterohaemorrhagiae exist as pathogens. This book was written because of a growing need to include leptospiral identification in the routine work of clinical laboratories. The book is mainly devoted to diagnostic procedures, which include dark field examination of the blood, spinal fluid, and urine; cultural procedures and mediums; animal inoculation; and serologic procedures (the agglutination-lysis test, agglutinin-absorption test, and others), with brief chapters on morphology and staining methods. This is followed by a brief discussion of the antigenic structure of leptospira and characteristics of type strains. A list of references is given in the back of the book. The index is adequate. There are a few photographs of equipment but no photomicrographs or diagrammatic sketches of leptospira. This book can be recommended as a laboratory manual in a limited field.

Modern Practice in Anesthesia. Edited by Frankis T. Evans, M.B., B.S., F.F.A.R.C.S., Consultant Anaesthetist, St. Bartholomew's Hospital, London. Second edition. Cloth. $12.50. Pp. 645, with 221 illustrations. Paul B. Hoeber, Inc. (medical book department of Harper & Brothers), 49 E. 33rd St., New York 16, 1954.

This new edition, written by leaders in the field of anesthesia and related areas, includes relatively few additions, deletions, or changes. The contributing authors are essentially the same in this excellently edited, neatly organized, and adequately illustrated book. The book is a cross between a manual and a textbook. It begins with a short history of anesthesia, a chapter on

---

These book reviews have been prepared by competent authorities but do not represent the opinions of any official bodies unless specifically so stated.

anatomy for the anesthetist, and a fine section on the physiology of respiration. The physiology of circulation, which should have been discussed next, is not presented as such but is woven into other sections. This book naturally continues with pharmacology, apparatus, and basic considerations such as preparation of the patient, and basal narcosis. Dr. T. C. Gray's section on relaxants is truly outstanding. The book then goes on to discussions of the technical aspects of the practice of anesthesia. It is to be recommended to libraries, students, anesthesia and surgical residents, and practitioners. There are very few weak sections, and many are superb. The only minor point of criticism is that it is impossible to cover in detail all of the subjects discussed in a book of this size. The references are adequate so that the reader may gather supplementary data if he desires. This book gives a true picture of the practice of anesthesia from the British viewpoint.

Physiology in Diseases of the Heart and Lungs. By M. D. Altschule, Assistant Professor of Medicine, Harvard Medical School, Cambridge, Mass., Harvard University monographs in medicine and public health, no. 10. Second edition. Cloth. $7.50. Pp. 554. Harvard University Press, Cambridge 38; Oxford University Press, Amen House, Warwick Sq., London, E.C.4, 1954.

This small book constitutes a concise and useful springboard to much of the worth-while literature dealing with diseases of the heart and lungs. The references are extensive and well selected. The conclusions of the author regarding the material in the original source articles are brief, sometimes at the expense of explanation and qualifying comments that might be helpful to the reader. This brevity was no doubt unavoidable if the compendium was to be kept within reasonable limits. The system of listing authors' names and years of publication throughout the text that is used here and that has recently found some support among medical editors makes for interruption of thought and loss of smooth reading. The monograph is nonetheless valuable for its brief statements from the literature, carefully culled by an authority. It will be especially helpful to those who seek a ready reference to source material.

Clinical Interpretation of Laboratory Tests. By Raymond H. Goodale, M.D., Pathologist at Worcester Hahnemann Hospital, Worcester, Mass. Third edition. Cloth. $7.50. Pp. 720, with 105 illustrations. F. A. Davis Company, 1914-16 Cherry St., Philadelphia 3, 1954.

This new edition has been completely revised and covers most of the recent advances in the field of laboratory medicine. As in earlier editions, the book is arranged in two parts. The first provides normal and abnormal values for the body fluids, excreta, and technical procedures, with general discussions of their interpretations; the second outlines the pertinent laboratory findings in various diseases arranged according to the body systems. The laboratory procedures of choice for each disease are listed with the most important first. Each chapter is followed by a list of references. The author also makes use of numerous tables and illustrations, which supplement the discussions and save time and space. A general index is provided at the end. The format and printing are unusually clear; the binding is sturdy and well suited for use both within and outside the clinical laboratory. Clinicians, technicians, and students should find the book highly useful as a textbook and reference on all important aspects of laboratory medicine.

A Manual on Cardiac Resuscitation. By Robert M. Hosler, M.D., F.A.C.S. Cloth. $4. Pp. 183, with 14 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2b, Canada, 1954.

This small book, printed in clear, large, easily readable type, will easily fit in one's coat pocket. It covers briefly in a well-organized form the subject of cardiac arrest, from case histories to legal aspects, but emphasizes etiology and treatment. The style is simple and clear. The book is recommended to all surgeons as a guide to the prevention and treatment of cardiac arrest. The chapters on etiology and prevention should be read and reread. The more they are studied, the less need there will be for the chapter on resuscitation and postoperative management.

Glandular Physiology and Therapy. Prepared under auspices of Council on Pharmacy and Chemistry of American Medical Association. Fifth edition. Cloth. $10. Pp. 611, with 20 illustrations. J. B. Lippincott Company, 227-231 S. Sixth St., Philadelphia 5; 2083 Guy St., Montreal, Canada; British agent—Sir Isaac Pitman & Sons, Ltd., 39 Parker St., London, W.C.2, England, 1954.

This new edition is thoroughly revised and modernized with little or no resemblance to the previous texts. With the aid of 31 eminent authorities on endocrinology, the book cannot help but attain adequate, well-documented handling of each problem. Each author has freely expressed his own opinions and views. A traditional approach to each endocrine gland has been followed, with discussions of anatomy, physiology, and abnormalities of function. Wherever possible, emphasis has been placed on treatment. Interesting additions not found in the average textbook are the chapters on integration of endocrinology, abnormalities of body weight, endocrine management of neoplastic diseases, abnormality of sexual behavior, behavior and intelligence, and common misconceptions in endocrine therapy. The last section of the book is devoted to diagnostic laboratory tests for specific endocrine dysfunctions, the chemistry of hormones, and their modes of administration. This book is a worthy successor to its distinguished predecessors.

Music Therapy. Edited by Edward Podolsky, M.D., Department of Psychiatry, Kings County Hospital, Brooklyn, N. Y. Cloth. $6. Pp. 335, with illustrations. Philosophical Library, Inc., 15 E. 40th St., New York 16, 1954.

This book performs a service for the physician by bringing together much diversified and interesting material about music and its place in medicine. Few of the contributors are physicians, and much of the material is difficult to evaluate, a difficulty inherent in the nature of the medium under consideration and increased by the difficulty of measuring so elusive a quality as an emotion. The material is written, for the most part, by enthusiastic proponents of music as a therapeutic tool. Certainly there is enough evidence to indicate that music as an influence on emotions—and therefore a potentially useful adjunct in the treatment of depression and maniacal states, and in group therapy—cannot be ignored or dismissed by the physician. This book summarizes the spread of interest in music therapy and the direction of inquiries into the therapeutic value of music. It should be valuable as a stimulus to further research.

Grenz Ray Therapy: Principles, Methods, Clinical Applications. By Gustav Bucky, M.D., and Frank C. Combes, M.D., Professor of Dermatology and Syphilology, New York University Postgraduate Medical School, New York. Contributors: Ralph Howard Brodsky, D.M.D., consulting Oral Surgeon, Department of Hospitals, New York, et al. Cloth. $8.50. Pp. 204, with 62 illustrations. Springer Publishing Company, Inc., 44 E. 23rd St., New York 10, 1954.

Dr. Bucky has long been recognized as a leading authority on x-rays, and both he and Dr. Combes have had much experience with the ultra soft rays known as grenz rays. They have called to their assistance seven other authorities to produce this valuable text. The development of grenz ray therapy and the difficulties encountered are briefly described. The invention of the Coolidge tube and the ionization chamber made it possible to control the quality and quantity of rays but many later improvements have much enhanced the safety and accuracy of the x-ray machine. Attempts to obtain rays up to 15 Å have ceased and the present machine produce rays of about 2 Å at 15 volts.

Glasser and Steinitz with the aid of diagrams and charts explain the physics and technique of grenz ray therapy. Bucky writes of ionization in biologic materials and of gross skin manifestations, while Goldzieher describes the histological changes produced in the skin. Sagher cites good results in the treatment of tropical diseases with grenz rays, and with Landau describes their use in the treatment of superficial diseases of the eye. The treatment of lesions of the oral mucosa is discussed by Brodsky. Combes contributes an excellent section on skin diseases, covering a wide field in comparatively few pages. His treatment of his subject is conservative and its brevity complemented by references to the literature. The bibliographies at the end of each chapter and the classified bibliography preceding the index add a great deal to the value of the treatise. The book is beautifully printed and well illustrated. It is highly recommended to dermatologists, ophthalmologists, and oral surgeons.

QUERIES AND MINOR NOTES

PALINDROMIC RHEUMATISM

To the Editor:—*I would like help in the diagnosis and treatment of a 40-year-old man who has had attacks of swelling and stiffness in various joints during the past 20 years. The only joints that have never been involved are the intervertebral. Rarely is more than one joint involved at a time. The only association he has noted is with trauma or overexertion; e. g., when he goes hunting, the ankles, knees, or hips are more likely to be affected and, in work, the wrists or fingers. The affected joint swells rapidly and becomes stiff but without any great pain and then, with application of heat, is completely restored to normal in one and one-half to three days. There is no periodicity to the attacks, and they are not seasonal. They are not accompanied by fever or malaise. The appearance of the part affected is like the arthropathy of serum sickness, but the patient has no other allergic manifestations and no familial history of allergy. His sedimentation rate is 32 mm. All other findings are normal.*

Virginia C. Hamilton, M.D., Bath, Maine.

Answer.—A diagnosis of palindromic rheumatism appears to be applicable in this patient. This term, derived from Greek roots meaning "to recur," was employed by Hippocrates to characterize erysipelas and other ailments tending to appear repeatedly in the same patient. The same term was chosen recently by Hench and Rosenberg (*Arch. Int. Med.* 73:293 [April] 1944; *Proc. Staff Meet., Mayo Clin.* 16:808, 1941) to designate the type of rheumatic disease herein described in this condition. Usually only one joint is involved during each attack, although occasionally several joints are attacked simultaneously. Episodes appear suddenly, persist only a few hours or days, and disappear, leaving no residual damage. Rarely, episodes lasting up to a week or two have been noted. Almost every joint is liable to attacks, but a predilection for finger joints has been noted. Favorite sites other than fingers include the dorsum of the hands, knees, hips, shoulders, ankles, elbows, temporomandibular joints, sternoclavicular joints, and cervical vertebrae. Fewer than 100 cases have been reported. The disability that accompanies attacks is usually mild, and patients generally are able to work despite the presence of attacks. In some severe episodes, however, pain prevents activities such as dressing or walking, and for exceptional attacks, narcotics are required for relief of intense pain.

Constitutional involvement generally is mild during and between attacks. Patients do not lose weight, generally have no fever, and only occasionally demonstrate elevation of sedimentation rates in connection with severe attacks. Erythrocyte counts and hemoglobin levels are generally normal; no increase is noted in numbers of the eosinophils; blood chemistry has generally shown normal levels of uric acid, calcium, phosphorus, sugar, choleseterol, etc. Roentgenographic examinations characteristically show no changes. In occasional instances, unrelated primary or traumatic osteoarthritis may be present and may be noted in roentgenograms. Pathological lesions produced by palindromic rheumatism are poorly understood. Material reported as having been studied thus far has consisted mainly of a few small biopsy specimens. During attacks, acute cellular exudates have been found in synovial cavities. These have been of a nonspecific character and consisted mainly of polymorphonuclear leukocytes and accumulations of fibrin. During early phases of an attack synovial membranes have shown intense inflammation of a nonspecific character, and later, as attacks have subsided, organizing granulation tissue and leukocytes have been noted in similar specimens. Inspections of interiors of joints during attacks have shown no destruction of cartilage and no formation of pannus or villous proliferation of synovial lining, such as one might encounter in rheumatoid arthritis.

The cause is unknown. The sudden appearance of inflammation and prompt and complete clearing has generally been considered as suggesting urticaria or other allergic conditions, but similar episodes have been observed as forerunners of rheumatoid arthritis, so that the allergic hypothesis is not well established. Many remedies have been tried, but none has been generally successful. Three patients with palindromic rheumatism were treated successfully with a soluble gold compound by Boland and Hedley (*Ann. Rheumat. Dis.* 7:246, 1948). Other measures worthy of trial include applications of heat in the form of hot compresses or infrared lamps, analgesics, and sedatives.

GUILLAIN-BARRÉ SYNDROME VERSUS POLIOMYELITIS

To the Editor:—*1. Can Guillain-Barré syndrome be distinguished from a severe case of poliomyelitis in a late stage? 2. What is the usual mode of onset and history of the Guillain-Barré syndrome? 3. What is the frequency of this syndrome, and what is the prognosis?*

S. W. Scorse, M.D., Joplin, Mo.

Answer.—1. Acute polyneuritis of unknown cause, which has been described by the terms "Guillain-Barré syndrome" and "infectious polyneuritis," can usually be distinguished from acute anterior poliomyelitis by the distribution of the paralysis. The paralysis in patients with polyneuritis of the Guillain-Barré type is symmetrical, involving all four extremities, and is usually severest in the distal portion of the extremities. There may also be a mild or moderately severe paralysis of the muscles innervated by the facial and the 10th, 11th, and 12th cranial nerves. The paralysis in the usual case of acute anterior poliomyelitis is asymmetrical; that is, there is involvement of one or both lower extremities, one lower extremity and one upper extremity, or one upper extremity and the muscles supplied by the lower third of the medulla oblongata. In severe cases of acute anterior poliomyelitis, in which the muscular paralysis may be generalized, the differential diagnosis from acute polyneuritis cannot be made from the distribution of the paralysis. The results of the sensory examination are of great importance in the differential diagnosis. In acute anterior poliomyelitis there is no impairment of sensation, while sensory loss of a mild or severe degree is an almost constant finding in polyneuritis of this type; it is characterized by a loss or impairment of cutaneous sensibility in the extremities, commonly of glove and stocking distribution, and by impairment of proprioceptive sensations. In addition, the cerebrospinal fluid findings in the early stage are of definite value in the differential diagnosis. The fluid usually contains no cells in patients with polyneuritis, whereas a pleocytosis of 10 to 150 cells per cubic millimeter is an almost constant finding in patients with acute anterior poliomyelitis. If the fluid is examined several weeks after onset, however, a normal cell count and a high protein content (albuminocytological dissociation) are the usual findings in both conditions. 2. The onset of symptoms in Guillain-Barré syndrome is usually acute. In about 50% of the cases there is a history of a previous upper respiratory or gastrointestinal infection that precedes the onset of the neuritis by about 5 to 10 days. After the onset of symptoms, the disease progresses rapidly for the next three to five days. Only rarely is there any progression after that time. In the mild cases improvement may start within a few days of the onset, and there may be complete or almost complete recovery within a period of a few weeks. In severe cases the paralysis is of much longer duration, and it may be many months before the patient recovers completely. Residuals such as partial foot drop and diminished reflexes may occur. 3. Guillain-Barré syndrome is a relatively uncommon disease. Only a few cases

---

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

are seen in a large medical or neurological service each year. If, however, the total number of polyneuritides is considered, this type is probably second in frequency to the so-called alcohol deficiency type of polyneuritis. The prognosis is usually good, especially in children. The mortality rate in adults was formerly about 20%, but with modern respirator care this figure is much lower.

REFERENCES

Roseman, E., and Aring, C. D.: Infectious Polyneuritis, Medicine **20:** 463, 1941.

Haymaker, W., and Kernohan, J. W.: The Landry-Guillain-Barré Syndrome: Clinicopathologic Report of 50 Fatal Cases and Critique of the Literature, Medicine **28:** 59, 1949.

Forster, F. M.; Brown, M. R., and Merritt, H. H.: Polyneuritis with Facial Diplegia: A Clinical Study, New England J. Med. **225:** 51, 1941.

MASSIVE HEMATEMESIS

To the Editor:—*A 33-year-old woman was found to have an active ulcer with a definite crater as an explanation of a massive hematemesis that required blood transfusions in May, 1950. After recovery and for three years she was asymptomatic of any gastrointestinal complaint. She gained 24 lb. and did not restrict her diet for over two years. Fluoroscopic examination in October, 1953, revealed an ulcer on the greater curvature of the stomach at the junction of the pars media and the pylorus and an impression of a duodenal ulcer in the cap. Operation revealed no duodenal ulcer, but a large gastric ulcer was demonstrated in the region described. Is the gastric ulcer a recurrence of a duodenal ulcer or a separate and distinct entity?* *Lloyd H. Murdock, M.D., Zwolle, La.*

Answer.—The description of the operative findings indicates that the gastric ulcer was the only active ulcer in 1953. There could have been a duodenal ulcer in 1950, which had healed in 1953. There was, however, only x-ray evidence that this had ever been the site of a duodenal ulcer, and this was not confirmed by surgical exploration. It is well known that, if the duodenum is not opened, some ulcer scar of the duodenum can be missed by palpation and exploration. It would therefore be impossible to definitely state where the massive hematemesis originated.

VENIPUNCTURE IN AN INFANT

To the Editor:—*Could you advise me on the feasibility of a laboratory technician procuring blood from an infant by way of the femoral vein or a fontanel puncture.* *M.D., Illinois.*

Answer.—To obtain a sample of venous blood from an infant by puncture of the femoral vein or by puncture of the fontanel is a relatively formidable procedure, not without danger to the patient. This method of obtaining blood from babies should therefore be undertaken only by physicians with special training with the procedure. By no means should technicians be permitted to obtain blood in this manner. Technicians may be permitted to obtain blood samples by puncturing the baby's thumb, large toe, or heel. If a large sample obtained by venipuncture is needed, the aid of a physician must be enlisted.

CATGUT SUTURES

To the Editor:—*Do absorbable sutures made from animal tissues transform themselves or lead to a change of the structure, multiplication, and growing of the cell tissues in the human body, which later degenerate into those of the malignant type?* *M.D., South America.*

Answer.—Catgut is usually made from the collagenous portion of the submucosa of the sheep's intestine. Variation in the time of absorption is accomplished by tanning the collagen with agents such as chrome salts. Implantation of catgut causes a mild reaction characterized by infiltration of leukocytes, round cells, and macrophages. The extent of the reaction depends on the size of the suture, being less with the smaller sizes, and with the type, being less with chromic than with plain catgut. There is no reported evidence that metaplastic changes have ever occurred at the site of catgut implantation owing to the catgut or the tissue reaction invoked. Since neither collagen nor any of the materials used in preparation of catgut have ever been found to be carcinogens, it is exceedingly unlikely that there is any remote association between the use of absorbable sutures and malignant change.

THRUSH

To the Editor:—*In regard to the query on thrush in* The Journal, *July 3, 1954, page 949, I had several cases of thrush last September that were confirmed bacteriologically. The patient responded promptly to application of polymyxin solution made by dissolving one tablet in 30 cc. of water. The solution was applied with a cotton applicator every two hours and prepared fresh twice daily. Most children were able to eat without pain the following day and were asymptomatic in two to five days.* *J. W. McHarry, M.D., Havana, Ill.*

AN EMERGENCY KIT

To the Editor:—*In the query about an emergency kit in* The Journal, *July 24, 1954, page 1195, the inquirer desires to know what to carry in an emergency bag for possible cardiac attacks among his aged friends. The reply is good except as regards the use of epinephrine for severe allergic manifestations. It ends by stating, "One 10 cc. sterile syringe with a no. 20 needle would be adequate for all the above medications." A 10 cc. syringe and a no. 20 needle are too large for properly administering epinephrine, a life-saving drug. As this medicament should be injected subcutaneously, commencing with a dose of 4 minims (0.25 ml.) (see pertinent answer in* The Journal, *Feb. 13, 1954, page 638), a 1 cc. tuberculin syringe and a no. 25 needle are necessary. It is also advisable to have at least two needles and syringes, not one, because of the possibility of breakage and clogging.*

David Louis Engelsher, M.D.
178 E. Mt. Eden Ave.
New York 57.

EXCESSIVE FLOW OF TEARS

To the Editor:—*In regard to the query on severe epiphora of unknown cause in* The Journal, *July 3, 1954, page 950, Fuchs says it is sometimes simply a disease of the aged with no known etiology (Wolff, E.: Pathology of the Eye, ed. 1, New York, Blakiston Company, 1935, p. 231). In these cases I think operation on the palpebral lacrimal gland or on the ductules should be considered. Duke-Elder (Text-Book of Ophthalmology, St. Louis, C. V. Mosby Company, 1952, vol. 5, p. 5211) says keratoconjunctivitis sicca (about the only possible complication) rarely follows excision of the palpebral lacrimal gland, and even when it does occur it happens in patients who have a chronic disease of the conjunctiva that has caused a decrease in the secretions from the glands of Krause and of mucus from the mucous membranes. Thus there seems almost no danger in a patient with a fairly healthy conjunctiva. Spaeth (Principles and Practice of Ophthalmic Surgery, ed. 3, Philadelphia, Lea & Febiger, 1944, p. 103) describes Jameson's simple (graduated, if desired) operation for sectioning part or all of the lacrimal ductules with removal of part or all of the inferior glandular tissue. In the same way that a patient with partial loss of vision from cataracts is given the option of having an operation that is subject to a number of fairly frequent, serious complications, the patient with severe epiphora should be told of the possibility of operation and allowed to decide. I have done this operation on patients who were incapacitated, almost prostrated, by obstruction of vision from tears, severe excoriation of the skin of the cheeks, the necessity to constantly wipe away tears, and inability to appear in public because of constant "crying." They have been cured and extremely grateful; none has had any dryness.*

William B. Hubbard, M.D.
302 Paterson Bldg., Flint, Mich.

THE JOURNAL

of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 156, NO. 6

CHICAGO, ILLINOIS

COPYRIGHT, 1954, BY AMERICAN MEDICAL ASSOCIATION

OCTOBER 9, 1954

THE MENOPAUSE

Edmund R. Novak, M.D., Baltimore

Our ideas as to cause, symptomatology, and management of the menopause have a more solid foundation than those concerning amenorrhea, dysmenorrhea, or functional bleeding. One must emphasize, however, that any discussion of the management of the menopause requires at least a fundamental knowledge of psychosomatics, for this phase of a woman's life is markedly infiltrated and confused by symptoms and ideas that have no organic foundation. The lay expression "change of life" in itself suggests a radical transformation in a woman and is probably instrumental in the production of many of the subjective phenomena seen in women at this period. Some familiarity with prevalent folklore and misconceptions pertaining to the menopause not only is of academic interest but can be utilized for more effectual therapeutics than any other single agent.

It is uniformly accepted that the menopause is a sequel to ovarian failure that is generally not abrupt but more often preceded by a period of months or years during which there is beginning and increasing impairment of gonadal function. Menstruation may be abnormal and characterized by a failure to ovulate, with resultant imbalances in the ovarian-pituitary relationship. It is important to bear in mind the sometimes rather prolonged span of impaired but continuing ovarian function, for it has a definite bearing on the understanding of certain types of menopausal and postmenopausal bleeding. Most gynecologists feel that failure to bleed for a year constitutes presumptive evidence of the menopause, although certain exceptions may be noted.

MENARCHE AND MENOPAUSE

It is a curious fact that the ovary, apparently alone of all the endocrine glands, has a limited and foreordained span of functional life, embracing some 30 to 35 years. It is generally, if not uniformly, accepted that all of the primordial follicles in an ovary are formed in embryonic life and that no additional ones are created. There is no doubt that postmenopausal ovaries are completely lacking in follicles, although there is suggestive evidence that in certain instances there may be continued or renewed postmenopausal estrogenic function. Indeed, some persons feel that such ovaries may be a factor in the evolution of postmenopausal hyperplasia or adenocarcinoma. Although there have been several recent articles stressing the importance of postmenopausal activity of the ovarian stromal cells as a possible source of estrogen production with development of hyperplasia and adenocarcinoma, this can be regarded as only an unproved, if enticing, hypothesis.

Physiology of the Menopause.—In the majority of cases it seems that ovarian failure does take place, and as a result of estrogen deficit there is a rise of the pituitary gonadotrophins. Any discussion of the vagaries of the gonad must of necessity take into account the important and fundamental concept of the reciprocal relationship between the ovarian and pituitary hormones. Originally it was speculated that the menopausal syndrome was secondary to a lowered pituitary gonadotrophic substance, but it is now well established that the primary defect is ovarian and that production of the pituitary hormones continues unimpaired and at a high level. One may well make a comparison with a group of skilled acrobats standing on a delicately balanced platform. If one of them steps off, the equilibrium is disturbed, and the platform sways and teeters until there is proper adjustment of the acrobats. At the menopause it is the ovary that falls out of line and thus temporarily disturbs the endocrine relationships until an equilibrium can be obtained; it is during this transient era that a number of women manifest certain characteristic symptoms. A fundamental concept is that every woman must undergo physiological adjustment to cessation of ovarian function, and this is of utmost importance in therapy. As will be emphasized later, protracted continuous estrogen administration will serve to postpone the inevitable adjustment in the ovarian-pituitary axis and prolong the symptoms.

Symptomatology and Physical Changes.—Clinical manifestations of the menopause are much more impressive than those associated with the pubertal inauguration of menstrual function. No one will deny that many, and probably most, women pass the climacteric without undue difficulties, but there is a small proportion in whom

---

From the Department of Gynecology, Johns Hopkins Hospital.

Read in the Symposium on the Disturbances of Menstruation before the Section on Obstetrics and Gynecology at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 24, 1954.

symptoms are so severe as to constitute a problem necessitating therapeutic relief. The only clear-cut symptoms of estrogen deprivation, and those on which the need for treatment should be based, are the vasomotor group consisting of: (1) flushes that characteristically involve the head, neck, and upper thorax; (2) sweats that accompany or immediately follow the flushes but may be much more of a problem than the flushes; and (3) the so-called flashes, typified by hot tingling involving the whole body and generally less bothersome than the other vasomotor symptoms. The incidence and degree of these typically menopausal symptoms shows rather marked individual variation, so that precise statistics are difficult to arrive at. The most accurate approach to objectivity would appear to accrue from estimates or counts of the frequency of flushes, sweats, and flashes, and an incidence of 10 to 15% of all women in the menopause would seem to suffer such difficulties to an extent necessitating therapy. Mild or moderate vasomotor problems are the rule and generally require only simple explanation and assurance that they are apt to be periodic and short-lived. At this point, the surgical or irradiation menopause may be mentioned, for it has acquired a reputation as being unduly severe, abrupt, and difficult to contend with. In my experience, this reputation is undeserved, for this type of climacteric parallels others with the usual variations according to individual temperament.

The aforesaid symptoms constitute the only ones in which a direct causal influence seems likely. On the other hand, many problems can be enumerated by patients and certain physicians, and there is no denying that these are often encountered in clinical practice. Such symptoms as headaches, vertigo, fatigue, arthralgias, nervousness, irritability, and many others are frequently quoted, and while no one can state dogmatically that they may not be a sequel of estrogen withdrawal, it seems that they are probably more often functional in origin. There are frequently women who, even today, feel that an inevitable sequel to the menopause is insanity, obesity, cancer, cessation of sex life, and hirsutism. In addition, it is easily understandable that a woman who has vasomotor flushes and sweats, most common at night, may lose sleep and secondarily become tired, irritable, and nervous. It requires no psychiatrist to see why such a woman may greatly overexaggerate her difficulties if she has preconceived erroneous ideas as to the menopause, and certainly "nervous breakdowns" are a not infrequent concomitant of the menopause. While it is fair to assume that this various array of neuropsychic symptoms is secondarily due to the menopause, it cannot be concluded that estrogen deprivation per se is a causal factor, although some persons recognize an involutional melancholia as a specific menopausal entity.

Physically, certain changes do take place in the woman in the climacteric apart from the general systemic process of growing older. There is a rather generalized atrophy of the genital tract, breasts, and bony structure (postmenopausal osteoporosis). The ovary becomes about the size of an almond, and as a result of its loss of function further changes occur in other portions of the genitalia. The uterus involutes to about the size of one's thumb and is generally lined by a flat, atrophic endometrium, although there are not infrequent exceptions that may imply that estrogen is not always absent in the postmenopausal patient. There may occur considerable loss of vulvar fat and pubic hair, and characteristic changes occur in the vagina. In addition to constriction, there is a marked thinning out of the epithelium lining the vagina. Instead of a thick squamous epithelium, one microscopically may see a lining of only a few cell layers with subepithelial hemorrhages. Clinically, these changes are reflected by an annoying irritative discharge and typical tiny petechiae in a generally pale vaginal mucosa. Similar changes may involve the urethral meatus, producing urinary irritability closely simulating cystitis.

RATIONALE OF THERAPY

Before deciding how a woman in the menopause should be treated, it would be well first to consider if she should be treated, and I should like to stress repeatedly a single basic fact. The mere fact that a woman is menstruating normally is proof positive that estrogen is being produced in adequate amounts, and one should hardly expect to find vasomotor symptoms unless scanty menses or amenorrhea is also present. The woman of 40 or 41 years of age who is still menstruating normally but has such functional symptoms as nervousness, insomnia, headaches, vertigo, and depression probably owes her symptoms to other causes than the menopause. Among these causes can be included domestic and family worries, financial problems, the atomic bomb, or whether the Dodgers will win the pennant.

Admittedly it is a temptation to save time by simply telling the patient that her difficulties are due to change of life and to give her hormone therapy, often parenteral, at $5 to $10 an injection. Yet such a physician should feel highly culpable, not only for subjecting the woman to unnecessary and potentially harmful endocrine therapy but also for increasing the symptoms by accentuating the woman's fears of the menopause. It is a sad but true fact that many women with perfectly normal menses are given hormone therapy for every possible symptom, only because they have reached 40 years of age.

At this point I should like to repeat that the sole criterion for hormone therapy should be the presence of the previously mentioned vasomotor symptoms (excluding senile vaginitis, a specific entity that will be discussed later). The exact mechanism of the characteristic vasomotor symptoms is not known, for these phenomena are observed only in the human and cannot be approached in the experimental animal. The vasomotor flush would seem comparable to a simple blush, apparently secondary to vasodilatation caused by the cervical ganglions. Whatever the sympathetic pathways may be in the menopausal flush, there must be some type of neurohumoral lesion, but in this respect knowledge is lacking.

TREATMENT

Once it has been decided that a woman is having definite vasomotor symptoms of menopausal origin, the question of treatment must be considered. The more discriminating physician will not immediately institute haphazard endocrine therapy, preferring rather to individualize according to the woman's temperament and her symptoms. In every instance it should be mandatory to explain to the patient: (1) that the menopause is not a disease but an integral part of her life, (2) that it is not attended by any severe basic consequences, and (3) that it is a self-limited process, necessitating no treatment and ultimately rectifying itself spontaneously. In many, and perhaps the majority of cases, this simple explanation may be all the treatment required, for the average stolid and intelligent woman may prefer a brief and transitory discomforture to any formal medical regimen. In other persons, who are tense and high-strung, it may be advisable to add mild sedatives and antispasmodics like the various elixirs.

A minority of women in the climacteric, however, will present severe vasomotor symptoms with numerous flushes and flashes and perhaps nocturnal sweats that may drench bed clothes and require changing. It would seem unfair to omit the endocrine therapy that will act as the "pair of crutches" to help them through the difficult transition period, but no physician should embark upon a hormonal regimen without explaining the rationale and the desirability that it be as short-lived as possible. It is important to emphasize that endocrine therapy should be used only when necessary, should never be unduly prolonged, and should be utilized in the smallest amounts and over the shortest period of time necessary to effect relief of symptoms. Women can and do appear to become almost addicted to hormones, all of which have certain specific and potential unpleasant side-effects and complications and, above all, interfere with and prolong nature's attempt at readjustment. Much more serious is the as yet unproved possibility that prolonged estrogen therapy may play a role in the evolution of fundal adenocarcinoma.

Estrogens.—In a choice of hormones to suppress the vasomotor effects mediated by the pituitary gonadotrophins, the first and logical choice would seem to be estrogen. It is the physiological and normal female sex hormone, is inexpensive, and would seem to deserve priority over any type of androgen. Of the estrogenic hormones, a synthetic stilbene derivative, diethylstilbestrol (Stilbestrol), is inexpensive, effectively estrogenic, and tolerable to the vast majority of women. Perhaps 10 to 15% of all patients will exhibit mild toxic effects, such as nausea and vomiting, in which case a change to some other type of natural (conjugated) estrogen will be necessary. At present sufficient estrogens for oral administration are available to make any kind of parenteral therapy completely unnecessary and undesirable. There is rarely any justification for other than oral therapy in any kind of hormone administration, and any physician who routinely persists in the old-fashioned "shots or needles" is probably not being fair to his patient. Unfortunately it is still not uncommon to hear women speak (rather proudly) of their weekly "shot for change of life" by their physician or self-styled specialist, although orally administered estrogens with a prolonged action are available if desired.

Any substance that has an estrogenic effect may produce uterine bleeding, but this disturbing side-effect may be minimized if care is exercised to keep the dosage minimal and short-lived. Nevertheless the trained gynecologist will perhaps feel more free to utilize hormones in the patient who has had a hysterectomy. Should bleeding occur in a woman receiving estrogens, the physician is placed in a dilemma. He may assume, and probably correctly, that the bleeding is secondary to exogenous estrogen. Yet he cannot and should not neglect the pelvic and speculum examination, as well as curettage and biopsy, that is required to rule out a serious concomitant cause for bleeding. At this point, it is proper to emphasize that intermenstrual bleeding or menorrhagia should never be construed as due to the menopause, regardless of whether the patient is or is not receiving hormones. As a rule, however, estrogens in small and gradually decreasing amounts will not produce uterine bleeding, and it is my first choice for hormonal therapy of the menopause. In the specific entity known as postmenopausal, senile, or atrophic vaginitis, estrogen (including diethylstilbestrol) suppositories are available; in all other instances, oral therapy is the treatment of choice.

Androgens.—Androgens are more expensive and may be virilizing, but their use seems preferable to estrogens in certain cases, particularly when women are known to have endometriosis or myomas. In such patients it is possible that the estrogen might activate a lesion that has become quiescent at the menopause, and this hypothesis would seem to be based on rather solid ground. Less certain is the possible activating effect of estrogen on an irradiated (and menopausal) carcinoma of the cervix or a surgically treated fundal adenocarcinoma, but many clinics, including the Johns Hopkins Hospital, prefer to avoid estrogens in all such cases, and other means of treatment are sought. Vitamin E (alpha tocopherol) has been utilized with rather equivocal results, but it is in this group of patients with lesions definitely or possibly capable of estrogen stimulation that androgen therapy would seem to have its most definite indication.

Combined Substances.—In recent years there has been an increased vogue for the usage of combined testosterone and estrogenic substances, a preparation administrable by mouth or parenterally. The rationale would appear to be a decreased likelihood of bleeding, as not only are estrogen and androgen more or less antagonistic but smaller doses of each will still combine to suppress the pituitary factor. Furthermore, it has been rather generally accepted that androgens may cause a generalized sense of well-being by virtue of their established metabolic effects. This type of endocrine therapy would appear to be quite sound and beyond reproach, although personal experience is rather limited. The combined estrogen-androgen preparation is somewhat (not prohibitively) more expensive than estrogens alone, and since the plan of minimal and decreasing estrogens seems to cause no undue bleeding I have not felt it necessary to digress from this therapeutic approach when hormone therapy seems necessary.

There are so many effective plans for satisfactory hormone therapy that it would seem unnecessary to go into details. My preference is to have a suitable patient begin taking 1 or 0.5 mg. of diethylstilbestrol daily for a week or two and then begin the process of "weaning herself away" by taking her medicament every other night, then every third night, and so on. Every woman is given a short preliminary explanation along with the admonition to take the least amount of hormone necessary over the shortest period of time to keep comfortable, with the ultimate intent of getting along without treatment of any kind. Such a plan, admittedly only one of many satisfactory methods, would seem to combine optimal effect with minimal dosage and makes a direct appeal for some type of cooperation in the individual patient. It is my firm conviction that a brief discussion of the mechanism of the menopause, couched in language appropriate to the patient, may be the only necessary treatment but will in any case serve to provide an excellent rapport with the woman who requires more substantial therapy.

SUMMARY

The menopause is a physiological necessity rather than a disease, but various misconceptions and superstitions have combined to cause a fanciful, rather than factual, attitude on the part of both patient and physician. Various physiological and physical changes must be recognized, but other psychosomatic manifestations are often misinterpreted merely because they occur in a 40-year-old woman. As long as normal menses are occurring, one cannot attribute symptoms to the menopause; indeed, the only valid criteria for treating the menopause are the vasomotor flushes, sweats, and flashes. Hormone therapy should be used only as a last resort, should always be oral, and should be given in the smallest doses over the shortest period of time adequate to control symptoms. Estrogens are preferred, but other types of hormones can be used, always remembering that careful investigation of any bleeding is mandatory.

26 E. Preston St. (2).

REFLECTIONS ON THE PHYSIOLOGY OF MENSTRUATION

Charles E. McLennan, M.D., San Francisco

In discussing a few of the more homely truths about menstrual bleeding I will, perhaps, revive an old argument that some have tried to bury. To avoid misunderstanding, I believe it is essential to start with a reasonably precise definition of the subject. This implies that menstruation lends itself to a solitary and well-delineated description, acceptable to all who deal in any manner with this phase of physiology. Regrettably, such is not the case and at least two different points of view as to what constitutes menstruation have been defended by acknowledged authorities.

DEFINITIONS OF MENSTRUATION

In his widely quoted review, published in 1937, Bartelmez[1] said, "Menstruation is a bloody discharge associated with necrosis of uterine mucosa, recurring, in the absence of pregnancy, at intervals of from 3½ to 5 weeks in certain primates." He had been impressed by the observations of Markee,[2] who felt there were no qualitative differences in the bleeding at the end of ovulatory and anovulatory cycles—that the stasis, necrosis, vasoconstriction, and hemorrhages are identical in ovulatory and anovulatory cycles involving comparable growth of endometrium. Bartelmez ridiculed what he called "the current dogma," because it held that a woman with regular periods of bleeding, but no corpora lutea in her ovaries, was exhibiting "abnormal" bleedings; in his opinion she was menstruating in a perfectly acceptable fashion.

In the various editions of his "Textbook of Gynecology," Novak,[3] despite his strong clinical ties and an expression of distaste for arguments about definitions, endorsed the Bartelmez concept, which might be considered a product of the basic science laboratory, when he said "The term menstruation has always referred to periodic, physiologic uterine bleeding regardless of its hormonal mechanism." He felt that Robert Meyer and also Schröder, who included ovulation and the formation of secretory endometrium in their definition of menstruation, were guilty of surrounding the term with totally unwarranted limitations. He concluded his argument with the interesting, though perhaps not wholly applicable, analogy that a limited use of the word menstruation is no more logical than a limited use of the word childbirth, in the sense that the latter might refer only to delivery by the usual vertex mechanism.

As I have suggested already, some physicians do not believe that all periodic uterine bleedings should be described as menstruation. I like to think of menstrual bleeding as regularly recurring bleeding, of limited duration, originating from progestational (secretory) endometrium. This viewpoint is emphasized in the monographs of Fluhmann[4] and of Hamblen,[5] and particularly by Selye[6] in his "Textbook of Endocrinology" when he says that, although a proliferative endometrium will bleed upon withdrawal of estrogenic hormones, "here it is incorrect to speak of menstruation, and the terms pseudomenstruation or cyclic uterine bleeding are preferable." Judging solely from the frequency with which almost any sort of vaginal bleeding is called menstruation—even in women long past the menopause—I would guess that a majority of physicians have been unwittingly supporting the basic science concept of menstruation. At least a few, on the other hand, have been quite zealous in supporting the more limited, or what might be called the clinician's, idea of menstrual bleeding, because it is believed that this concept of the menstrual phenomenon can be of aid in the solution of clinical problems.

Read in the *Symposium on the* Disturbances of Menstruation before *the Section* on Obstetrics and Gynecology at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 24, 1954.

[1] Bartelmez, G. W.: Menstruation, Physiol. Rev. **17**: 28 (Jan.) 1937.

[2] Markee, J. E.: Menstruation in Intraocular Endometrial Transplants in the *Rhesus Monkey*, Contrib. Embryol. **28**: 219, 1940.

[3] Novak, E., *and* Novak, E. R.: Textbook of Gynecology, ed. 4, Baltimore, Williams & Wilkins Company, 1952.

[4] Fluhmann, C. F.: Menstrual Disorders: Pathology, Diagnosis, and Treatment, Philadelphia, W. B. Saunders Company, 1939.

[5] Hamblen, E. C.: Endocrinology of Woman, *Springfield*, Ill., Charles C Thomas, *Publisher*, 1945.

[6] Selye, H.: Textbook of Endocrinology, Montreal, Canada, Acta Endocrinologica, University of Montreal, 1947.

Clinician's View of Menstrual Bleeding.—For the most part the clinician is not concerned with regularly recurring periods of bleeding, reasonable as to quantity of blood loss, that are common to both of the definitions of menstruation already quoted. He is not concerned with them, because his patients seldom complain of them. The problems met in practice are those of bleeding that is profuse or prolonged, or both; bleeding that appears too soon following a previous episode; bleeding that fluctuates in quantity but persists in a most annoying fashion for seemingly interminable periods of time; or, perhaps, bleeding that is scanty or occurs infrequently.

These disturbances of bleeding clearly bear a relationship to the kind of endometrium that is bleeding, and for the most part are readily separable into (1) those that represent menstruation in the limited sense and (2) those that represent the breakdown of endometriums unaffected by progesterone and that, therefore, are not menstrual bleedings. When the disturbed menstrual bleedings have been identified it will be found that those of real clinical importance fall into the menorrhagia group, that is, bleedings that begin as menstruation but quickly exceed the well-defined limits of that physiological process in terms of quantity and/or duration of flow. And it will be found, furthermore, that virtually all of these menorrhagias are associated with organic lesions in or near the endometrium. This has been stressed recently by Buxton,[7] who noted the paucity of cases of menorrhagia actually due to a hormonal abnormality, that is, dysfunction of the pituitary-ovarian-endometrial axis, and advised thorough investigation before a patient is classed as having dysfunctional menorrhagia.

Anovulatory Bleeding.—If the bleeding episode under scrutiny has none of the criteria of menstruation one is left with the choice between a variety of anovulatory bleedings and bleeding produced by a miscellaneous array of pelvic lesions, such as disturbed pregnancy, neoplasm, inflammation, and even trauma. Here the term anovulatory bleeding is used in its broadest sense to indicate dysfunctional bleeding from any endometrium lacking a secretory pattern, whether it be atrophic, normally estrogenic, or even hyperplastic. I am well aware of the claim that some episodes of anovulatory bleeding will mimic menstruation almost completely, and I would not insist—despite Bartelmez's contrary opinion—that such bleedings be labelled abnormal. Actually, anovulatory bleeding of this sort seldom is encountered in practice, because it is not in any way disturbing to its victim, and, contrary to the opinions of some, I have found it to be a rare event even in women studied for infertility.

The constant application of these basic precepts to problems of disturbed uterine bleeding has been, and will continue to be, extremely rewarding both diagnostically and therapeutically. If the simple expedient of recognizing differences between ovulatory and anovulatory bleedings can be of genuine aid in solving clinical problems there is ample justification for insisting that the word menstruation refer only to bleeding from progestational endometrium. To use it in any other sense lends further confusion to a facet of gynecology already clouded by superstition, empiricism, and deceptive reasoning, engendered to a large extent by the specious publications of certain pharmaceutical concerns and by the parroted reports of their itinerant representatives. The constant reiteration of the fact that no qualitative differences have been found between the bleeding of ovulatory and anovulatory cycles serves no useful purpose and may, indeed, mislead the clinician who reads without pondering the words.

GROSS MANIFESTATIONS OF MENSTRUATION

If one tries to distinguish between menstrual and nonmenstrual bleedings he must remember that real menstruation can be described in terms of premonitory signs and symptoms, quality and quantity of bleeding, duration of the flow, and its temporal relationship to the previous episode of bleeding. Knowledge of these things is commonplace, but the application of these diagnostic aids has been far from universal.

The subjective symptoms that appear a few days before the onset of menstrual bleeding vary greatly in different women, both from the standpoint of bodily areas manifesting the symptoms and the degree of their intensity. Nevertheless, it is unusual for a woman not to experience some characteristic train of symptoms, however slight, prior to the shedding of secretory endometrium, and specific questioning on this point may uncover a valuable clue regarding the nature of a particular episode of bleeding.

Cycle Length.—If the time elapsed since the onset of the preceding bleeding is not readily determined from the patient's records, an effort should be made to pinpoint it as accurately as possible, since length of cycle is another identifying feature of menstruation. Many statistical studies of cycle length have been reported, and they are practically unanimous in claiming a range of about 20 to 35 days for what are assumed to be complete menstrual cycles. I have been unable to find any mention of a normal cycle of less than 18 days, and in my own experience I have seen only one woman with habitually short cycles who has begun to bleed from well-developed secretory endometrium as early as the 19th day after the onset of her previous bleeding. It seems fair to assume, then, that bleeding of clinical importance that appears considerably less than 18 or 19 days after the previous episode is unlikely to qualify as real menstrual bleeding, and some other explanation for it should be considered.

No single description of quality and quantity of menstrual bleeding can suffice for all women. As with the premonitory symptoms, there is wide individual variation, but the characteristics are reasonably constant for any one person. Information on color, odor, clots, and rate of loss on various days may point up real differences between bleedings of menstrual and nonmenstrual origin, and a little time devoted to the details of these simple matters may be rewarding. The patient's opinion as to whether the bleeding in question is normal or abnormal for her should not be overlooked.

Finally, one needs information about the duration of bleeding. Here again many studies have been made, and the consensus is that normal menstrual bleeding does not persist for more than seven days. An occasional writer mentions eight, or even nine, days as the upper limit, but I have not personally encountered a woman who had habitually more than seven days of menstrual bleeding and who had no demonstrable pathological explanation for this behavior. As with the short cycles, the excessively lengthy bleedings must arouse suspicion. To be sure, these bleedings may be truly menstrual at the onset, but something other than the simple shedding of secretory endometrium has been added and is behind the menorrhagia. Similarly, the period of bleeding from a proliferative endometrium often persists far beyond the limit for normal menstruation, but this condition commonly may be distinguished from a normal state by the fluctuating and unpredictable volume of flow and the almost total lack of prodromal symptoms.

---

[7] Buxton, C. L.: Obscure Intrauterine Lesion as Cause of Menorrhagia, J. Clin. Endocrinol. 13:813 (July) 1953.

COMMENT

I believe that more general acceptance of menstruation as a limited physiological phenomenon with specific histological and clinical components would improve appreciably judgment about the cause of uterine bleeding as it is seen in pathological states. With improved rational approach to these problems there is bound to be increased accuracy of diagnosis and a corresponding increase in the success of treatment.[8]

Admittedly, knowledge of the basic physiology of menstruation is incomplete at the moment. It would be helpful to know, for example, a great deal more about the precise humoral-neural-vascular mechanism by which endometrial bleeding is initiated and terminated. Indeed, it would be interesting to have an adequate explanation of the purpose of menstrual bleeding, if there be a real purpose behind it. Some knowledge of the role of lymphatic vessels in premenstrual endometrial changes, more about the function of endometrial arteriovenous anastomoses, and information as to whether coiled arteries really are essential in the production of uterine bleeding would be helpful. Further explorations of the manner in which a vast array of cholinergic and adrenergic drugs affect the endometrium and ovaries, perhaps by way of the hypothalamus and pituitary, might be profitable. All of these things, and many more, await final solution; but I contend that, even while waiting for these answers, there is sufficient knowledge of the major features of menstruation and its aberrations to enable physicians to cope successfully with most of the important clinical problems. Success in this area of medical practice is directly proportional, however, to the exactitude with which the available information is applied.

---

[8] McLennan, C. E.: An Effective Clinical Approach to Abnormal Uterine Bleeding, Am. J. Obst. & Gynec. 68:315 (July) 1954.

FUNCTIONAL UTERINE BLEEDING

Emil G. Holmstrom, M.D., Salt Lake City

The term "functional" includes those bleeding abnormalities that are not due to local lesions in the generative tract such as carcinoma, myoma, endometrial polyp, or pregnancy complications. The majority of these functional bleeding problems will be found to be due to disturbances in the normal pituitary-ovarian-endometrial hormonal relationships. The most commonly encountered hormonal disturbance is that which results in anovulatory bleeding. Although the exact hormonal stimulus that initiates ovulation is not well understood the best evidence indicates that no one hormone is responsible. It is likely that ovulation occurs when an optimal ratio has been reached between the secretion of F.S.H. (follicle-stimulating hormone) and L.H. (luteinizing hormone). It is reasonable to assume that in anovulatory cycles an imbalance between the secretion and these two hormones exists. It is unlikely that either hormone is completely absent, for estrogen effect in the endometrium is readily apparent, and available evidence indicates that secretion of both F.S.H. and L.H. is necessary for estrogen production. Rational therapy for anovulatory bleeding should, therefore, aim at stimulating a more normal ratio of production of F.S.H. and L.H. How this can best be accomplished is a matter for debate. I feel that this can best be done by the administration of progesterone in a cyclic fashion. There is experimental evidence that indicates that progesterone can influence the secretion of gonadotrophins. Ovulation has been induced experimentally in several animals by the administration of a single dose of progesterone. To prove by biological assay that the administration of progesterone influences the secretion of gonadotrophins in the human female requires sensitive assay methods for F.S.H. and L.H. beyond those presently available. Meanwhile, clinical results are the guide; experience has shown their value.

TREATMENT OF ANOVULATORY BLEEDING

During anovulatory cycles the endometrium undergoes proliferation of varying degree, depending on the length of time it has been subjected to estrogen stimulation before withdrawal bleeding occurs. In most cases the estrogenic effect has been sufficiently prolonged to produce a hyperplastic endometrium, but bleeding may occur while the endometrium shows only moderate proliferation. Administration of a sufficiently large dose of progesterone will convert either the hyperplastic or the proliferative endometrium to the secretory phase. Shedding of the converted endometrium follows in about four days; therefore, the irregular and prolonged bleedings associated with anovulatory cycles can readily be controlled by such therapy. In itself this result is enough to justify the use of progesterone in the management of anovulatory bleeding problems. A more provocative concept is that the progesterone, in addition to being substitution therapy, also initiates a chain reaction that results in subsequent spontaneous ovulatory cycles.

From the Department of Obstetrics and Gynecology, University of Utah College of Medicine.

Read in the *Symposium on the Disturbances of Menstruation* before the Section on Obstetrics and Gynecology at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 24, 1954.

Although progesterone can be effectively used in all cases of anovulatory bleeding, the intent of therapy is different in patients who are approaching the menopause. In that age group the treatment is modified as indicated later. Between the menarche and 35 years of age the treatment is carried out in the following manner. Immediately after the diagnosis is made on the basis of examination of the endometrium, 25 mg. of progesterone is given intramuscularly. If the patient is not bleeding at the time the progesterone is given, bleeding will occur in four days; if bleeding is already occurring, heavier bleeding will follow after the four day interval. Regular cyclic bleeding can then be induced by the administration of the progesterone on the 24th day of succeeding cycles. If bleeding fails to follow in four days there are three possible explanations: (1) ovulation has occurred recently, in which event bleeding will appear within 14 days (a single injection of progesterone will have no effect on an endometrium already in the secretory phase); (2) the endometrial proliferation has not been sufficient to respond to progesterone stimulation; and (3) pregnancy has intervened.

If bleeding occurs as expected, the therapy is repeated on the 24th day of the next cycle. This schedule is continued until there is evidence that ovulation is occurring spontaneously. This is indicated by failure of bleeding to follow the expected pattern. If bleeding occurs more or less than four days after progesterone is given, therapy is withheld during the next cycle. Endometrial biopsy is performed at the onset of the next bleeding. If biopsy indicates that ovulation has occurred, the patient is instructed to report only if bleeding fails to occur subsequently at the expected time. Recurrence of anovulatory cycles is usually heralded by a lengthened cycle. In this event, one injection of progesterone will usually be effective in initiating ovulatory cycles again.

When anovulatory bleeding occurs in women over the age of 35 it is an indication of failing ovarian function. Although sporadic ovulatory cycles may occur for several additional years, these are frequently interspersed with anovulatory cycles and prolonged bleeding episodes that may be exsanguinating. The purpose of the cyclic progesterone therapy in these patients is to avoid profuse bleeding periods until ovarian production of estrogen ceases. This can be easily accomplished by the administration of 25 mg. of progesterone at about 30-day intervals. Eventually there will be no response to the progesterone administration. If bleeding fails to occur after three injections at monthly intervals it is assumed that the patient has entered the menopause. Sporadic recrudescence of ovarian activity may appear within the next year or two. Prompt administration of progesterone will insure that any subsequent bleeding on this basis will be self-limited. The alternatives to cyclic progesterone therapy in this age group are radiation castration or hysterectomy. Radiation castration is frequently followed by troublesome vasomotor menopausal symptoms. Hysterectomy is admittedly radical treatment for a benign condition that can be satisfactorily handled nonsurgically.

RESULTS OF TREATMENT

The following tabulation summarizes results in patients under 35 years of age:

Primary Anovulatory Bleeding

First Ovulation After Treatment, Mo.	No. of Patients
1	2
2	1
3	4
4	3
6	2

Failure

One 27-year-old patient with 14 year history who had one ovulatory cycle in 4 year observation

Secondary Anovulatory Bleeding

First Ovulation After Treatment, Mo.	No. of Patients
1	3
2	1
3	2
6	1

Failures

Two patients with previous radium therapy
One patient with menopause at age of 33 (?)

These cases are divided into two groups. In the group called primary are patients who had never experienced regular cyclic bleeding. The secondary group gave a history of previously regular menstrual periods. Results were uniformly good. The lone failure in the primary group, although she had not responded with ovulation, nevertheless benefited from the monthly administration of progesterone in that her bleeding periods were kept regular and she avoided hysterectomy. Two patients in the secondary group who failed to respond with spontaneous ovulatory cycles had previously been treated with intrauterine radium in what was described as "sub-sterilizing doses." It is likely that the radium therapy so damaged the ovaries that they can no longer respond with ovulation when properly stimulated by the gonadotrophins. In my opinion there is no place for radiation therapy in the management of functional bleeding problems.

A more difficult therapeutic problem is posed by the patient who has regular ovulatory cycles but bleeds profusely during her menstrual periods. After ruling out such conditions as myoma, endometrial polyp, and irregular shedding, there remain a considerable number of patients who demonstrate no apparent cause for the menorrhagia. Blood studies may show no abnormalities of clotting mechanisms; however, some of these patients will show the presence of a heparin-like substance in the blood when the blood is titrated with protamine sulfate. This heparin-like substance is neutralized by toluidine blue as well as protamine sulfate. The protamine titration test will help to pick out the occasional menorrhagic patient whose bleeding problem may be benefited by the administration of toluidine blue during the menstrual period. Out of 28 patients with unexplained menorrhagia. 6 showed protamine titration values above the normal. All six of these patients were benefited by toluidine blue in a dosage of 200 mg. daily during the time of the menstrual flow. None of these have been followed for a sufficient length of time to evaluate the long-term effect of the treatment.

CONCLUSIONS

The type of functional uterine bleeding due to lack of ovulation is easily managed by single-dose, cyclic progesterone therapy. Some patients with menorrhagia without associated pathologic conditions of the uterus will be benefited by the administration of toluidine blue during the menstrual period.

2033 S. State (4).

AMENORRHEA

Russell R. de Alvarez, M.D., Seattle

Amenorrhea is a symptom of underlying normal physiology, pathological physiology, or systemic disease. It is not a disease, nor should it rightfully be considered a diagnosis. The underlying condition may not necessarily be disease but a functional problem that in itself may be either physiological or a condition not producing a threat to the patient's health or life. Amenorrhea is generally considered to be of two types, primary or secondary. By primary amenorrhea it is meant that a normal spontaneous period of menstruation has never occurred. Secondary amenorrhea is designated as having occurred in persons who have previously and normally menstruated.

CAUSES

The most frequent examples of amenorrhea are physiological in origin. It is normal for all women to have no bleeding prior to the menarche, with the exception of the not infrequent bleeding of the first few days of life, following the release of the female infant from the intrauterine influences of maternal steroids during pregnancy. This, usually of no significant degree, begins on the second or third day and lasts for one or two days. Puberty is the next normal period of amenorrhea. While mothers and families ordinarily become concerned when periods do not occur at the average age of 13 to 14 years, it is not uncommon for normal menses to be delayed until 16 to 18 years of age on a purely physiological basis. No active therapy is indicated for such minor delays, but investigation should include thorough history, physical examination, and pelvic examination, as well as some of the simpler and relatively inexpensive laboratory determinations if no gross problem is suggested by the history and the examinations. Such investigation, if for no other reason, is justified in the interests of fertility prognosis.

Pregnancy should always be considered as the immediate cause of amenorrhea, whether primary or secondary, among all patients within the childbearing age. Following delivery or in some instances of abortion lactation occurs. During the actual nursing period of lactation a suppression of pituitary activity of gonadotrophic hormones occurs, particularly of F.S.H. (follicle-stimulating hormone) and luteinizing hormone. Such suppression occurs during the period of continued luteotrophic hormone production in the absence of a corpus luteum. The next normal period of amenorrhea occurs during the menopause, where there is gradual waning of ovarian function. While this decrease of ovarian activity is sometimes considered complete during the symptomatic menopause, I now feel that such a decrease in ovarian function is not always complete but is merely of such degree as to decrease uterine stimulation by estrogen.

Anatomic Defects.—Anatomic defects present the most obvious causes for amenorrhea. Such defects as congenital absence of the vagina and/or the uterus, as well as congenital atresia of the vagina or cervix, are easily diagnosable in the simplest of gynecologic examinations. While there is no excuse for such defects not being diagnosed, it is not infrequent that a history reveals that patients have received multiple courses of hormone therapy prior to the making of the true diagnosis of congenital defects in the reproductive tract. Even though other defects of anatomic importance may not be so readily diagnosed, complete and careful study reveals their presence. The endometrium may show evidence of destruction from previous irradiation damage or from tuberculous endometritis. The ovaries may also present evidence of destruction by neoplasm or inflammatory disease. While it is not possible to outline evidence of structural destruction of the ovaries by irradiation, a careful history will offer the clue as to the primary ovarian failure.

Endocrinopathic Causes.—The pituitary gland is responsible for the stimulation of most of the other glands of internal secretion. Of particular importance in relation to the production of amenorrhea are the effects of the anterior pituitary gland upon the thyroid gland, adrenal cortex, and the ovaries. The influence of the pituitary on these glands is well demonstrated when the pituitary gland is removed. Under such circumstances the ovary, thyroid, and adrenal cortex undergo atrophy, with the subsequent change of clinical findings compatible with the deranged physiology of these target glands. In a like manner, involvement of the pituitary by neoplasm, atrophy, necrosis, thrombosis, or embolism provokes effects compatible with those subsequent to removal of the anterior pituitary gland.

When obliteration of the pituitary gland has occurred, there is little or no follicle-stimulating hormone elaborated. As a result, no estrogens are produced. In a like manner there is no stimulation of luteinizing hormone production and thus ovulation does not occur. As a result of the failure of the ovary to produce its steroid hormones, atrophy of the uterus ensues. When such a series of events occurs, the clinical diagnosis and the causative feature may be confirmed by performing certain endo-

---

From the Department of Obstetrics and Gynecology, University of Washington School of Medicine.

Read in the Symposium on the Disturbances of Mentruation before the Section on Obstetrics and Gynecology at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 24, 1954.

crine studies. When there is hypofunction of the pituitary, urinary F.S.H. is low; urinary estrogen output is also low. In addition, the vaginal smears are of the precornified type and there is no elevation of the basal body temperature. Microscopic study of the endometrium reveals atrophy. Such patterns of hypogonadotrophinuria, demonstrating evidence of pituitary hypofunction, are seen in Frölich's adiposogenital dystrophy, chromophobe adenoma of the pituitary, hypopituitary cachexia (Simmond's disease), and postpartum pituitary necrosis (Sheehan's syndrome).

The thyroid gland probably accounts for the most common endocrinopathic cause of amenorrhea. Hypofunction of the thyroid is seen as the more frequent thyroid cause of amenorrhea. Even though anatomic or physiological absence of the thyroid is not the most frequent cause of amenorrhea, gynecologists usually regard amenorrhea as one of the earliest symptoms of thyroid hypofunction. In hypothyroidism, thyroid hormone, which assists in maintenance of general body homeostasis, is decreased. As a result, the pituitary increases its stimulatory activity by increasing the output of thyrotropic hormone in an attempt to increase the output of thyroxin. This increased activity on the part of the pituitary to secrete additional thyrotropic hormone is carried out at the expense of gonadotrophic activity. Thus, a decrease in the pituitary output of follicle-stimulating hormone occurs. There is, therefore, a decrease or absence of pituitary stimulation of the ovary to secrete the steroids of the ovary. As a result, uterine atrophy and hypofunction occur with resultant amenorrhea. This sequence of events is usually and promptly reversible following the administration of thyroid hormone.

Hyperactivity of the thyroid is also, but not as frequently, a cause of amenorrhea as is hypothyroidism. In hyperthyroidism there is a depression of thyrotropic hormone output. When marked hyperactivity of the thyroid is evident, it is usually associated with relative malnutrition and increased emotional reactivity. The thyrotropic hormone is depressed by the excessive output of thyroid hormone. Gonadotrophic hormone output is similarly affected. If such phenomena occur at the time of late reproductive life, it is possible that the resultant symptoms may become confused with menopausal symptoms, so that careful evaluation of history and physical and endocrine investigation is mandatory.

The ovary is a common and frequent factor in the production of amenorrhea as a result of decreased physiological functional activity. Primary ovarian deficiency occurs as a result of physiological aging, interference with blood supply, irradiation, inflammatory disease of both ovaries, neoplasm, or removal of the ovaries. Secondary ovarian hypofunction occurs as a result of pituitary insufficiency to effect gonadotrophic secretion; such pituitary deficiency may be primary in the pituitary or be a result of the suppression of pituitary function by various steroids. When increased follicle-stimulating hormone is elaborated in an attempt to initiate gonadal activity of the granulosa and theca cells, failure of the ovary to react to such stimuli suggests functional changes compatible with ovarian deficiency. In such instances, none of the steroid hormones of the ovary is elaborated. Uterine atrophy and attendant amenorrhea result. In such cases, urinary gonadotrophin output is elevated with a decrease in estrogen output. The instances of amenorrhea occurring in which the ovary gives evidence of hyperfunction are rare. These occur among patients with virilizing tumors, such as the arrhenoblastoma, and in the adrenal-like tumors of the ovary, as well as in the rare clear-cell carcinoma (mesonephroma) of the ovary.

Hypofunction of the adrenal cortex (Addison's disease) is frequently reflected by the symptom of amenorrhea. This may be on the basis of primary panhypopituitarism with a deficiency of all the trophic pituitary hormones. The disease may be on the basis of primary disease in the adrenal cortex, as produced by tuberculosis, nonspecific infections, or necrosis. While the amenorrhea may be explained on the basis of hormonal alterations related to the attempted increased output of pituitary corticotropin (ACTH), other features may be held responsible for the amenorrhea, such as demarked debilitation that is generalized, the presence of tuberculosis, the low basal metabolic rate, and the general decrease in circulating blood volume. On the other hand, amenorrhea, or, for that matter, other menstrual disorders, may not be present at all, despite advanced degrees of adrenal cortical insufficiency.

In congenital adrenal hyperplasia, representing hyperfunction of the adrenal cortex, amenorrhea is one of the most constant symptoms and is often the one reason why the child or young woman is presented to the physician. When evidences of female pseudohermaphroditism exist, the diagnosis of adrenal cortical hyperplasia should always be entertained. Such persons secrete, selectively, excessive amounts of androgenic steroids. Among such patients, a marked increase in corticotropin emanates from the pituitary in an attempt to stimulate and maintain the production of glucogenic corticoids of the adrenal. The increased output of 17-ketosteroids should make one supicious of the possibility of adrenal cortical tumor. When the 17-ketosteroid output is within normal limits and the clinical findings suggest adrenal cortical hyperplasia, one must differentiate for the purpose of justifiable inclusion in this category. This may be clarified by performing determinations for pregnanetriol. If pregnanetriol is present, such cases may be classified as mild instances of adrenal cortical hyperplasia, even though 17-ketosteroid values are within normal limits.

Nonendocrinopathic Causes. — Nonendocrinopathic causes of amenorrhea include tuberculosis, even of mild degree. Diabetes, while strictly an endocrine disease, may well be associated with and due to obesity as well as other nonendocrine features. The relationship of diabetes to abnormalities of the adrenal cortex should also be clarified before the disease is considered to be primary pancreatic diabetes. Nephritis and malignant tumors are often associated with the symptoms of amenorrhea, particularly in patients with marked debilitation and prolonged disease. The same is true of blood dyscrasias, particularly those of the lymphoblastomatous type. Malnutrition and wasting diseases are common causes of amenorrhea. I have already referred to tuberculosis and adrenal cortical hypofunction. Hypopituitary cachexia and anorexia nervosa cannot be easily differentiated; the latter, however, is ordinarily considered to be on a psychogenic basis. The result is the same when malnutrition and general bodily debility and wasting disease occur. In postpartum pituitary necrosis, malnutrition may or may not be a feature; however, since general panhypopituitarism exists, this possibly could not be included as a nonendocrine cause. On the other hand, the cause of this clinically endocrine disease is usually associated with acute abruption of the placenta, a nonendocrine disorder, associated with marked blood loss, shock, and anemic infarction of the pituitary. Obesity is a common nonendocrine cause of amenorrhea; frequently the establishment of normal periods may be produced by simple reduction in calories, but with the maintenance of satisfactory basic constituents in the diet. Psychogenic disturbances of all varieties, including chronic alcoholism, morphine addiction, changing of climate, changing of schools, death in the family, and even pseudocyesis, should be considered in those persons presenting amenorrhea as their principal symptom.

INVESTIGATIVE MEASURES

As I have already stated, amenorrhea is a symptom of an underlying diagnosis and should not, therefore, be considered as a diagnosis in itself. Since the basic tenets of diagnosis include complete history and complete physical examination, these form the basic framework for investigating the clinical conditions reflected by this important symptom. A complete gynecologic examination is a requirement. The basic laboratory work, including hematocrit, leukocyte count, stained smear of blood, and a urinalysis, should be performed on each of such patients. Roentgenograms of the chest and skull and basal metabolic rate determination complete the minimal laboratory evaluation in this group of patients. Psychiatric evaluation should always be considered in the complete analysis of this symptom. When the diagnosis is not apparent from these stated methods of evaluation, exhaustive and specialized scrutiny is necessary. While the basal body temperature may not be as accurate an index as might be desired, it should be included for what it is worth without too much significance and emphasis being applied to results that are not diagnostic. Vaginal smear and endometrial biopsy give satisfactory information relative to gonadal-steroid activity. The determination of urinary gonadotrophins, ketosteroids, and estrogens tends to pinpoint the diagnosis or to direct the investigation along more specific paths.

ENDOCRINE ASSAYS

While endocrine assays are known to be a part of required investigation in most instances of amenorrhea, the actual types indicated and the meaning of the results obtained often present a dilemma to the person requesting these determinations. The physician should comprehend the principles involved in the determination of such tests; however, it is not necessary that he be familiar with the technical details, except to know that the majority of the tests are rather prolonged, difficult, tedious, and expensive. It is also important that the attending physician understand the interpretation of the results returned to him by the laboratory. Certainly the laboratory performing the work should maintain a staff of highly trained, specialized technicians, whose principal activity lies within this field. It should also be realized that haste cannot be used in these determinations. Accurate methods for collecting specimens should be explained to the patient so that the results of evaluation may be valid.

Gonadotrophins.—The determination of gonadotrophins is indicated to determine whether hypogonadism is due to a primary defect in the gonad or whether it is due to pituitary hypofunction, with its attendant failure to stimulate the gonad. Elevated levels of urinary gonadotrophin are found in women in postmenopause and in persons with ovarian failure of other causes. Hypogonadotrophinuria is found before puberty. It is also normally present during the early follicular phase of the cycle, so that care should be taken not to collect specimens at this particular time in attempting differential diagnosis. In disease states of hypopituitary type, hypogonadotrophinuria is found in patients with hypopituitary cachexia, postpartum pituitary necrosis, adrenal cortical hypofunction, and in some instances of hypothyroidism.

Estrogens.—Estrogenic activity may be determined rather simply on a quantitative basis by using the Mack test for glycogen content or by the staining method of Papanicolaou. While none of the methods for determining estrogen level is completely satisfactory, fluorometric methods presently offer the most satisfactory results; however, this method of determination is unusually prolonged and tedious. Low estrogen levels are found in the prepubertal period, after the menopause, and in instances of primary ovarian failure. Estrogens are also low when ovarian hypofunction is secondary to primary anterior pituitary hypofunction. In most instances of polycystic ovaries the estrogen excretion is also low. High levels of estrogen excretion in the urine are found during pregnancy. Most of the methods of assay can be applied to the quantitative determination of estrogens during pregnancy because of the high output. Granulosa cell tumors and theca cell tumors are responsible for elevated excretion of estrogen. In some instances of adrenal cortical hyperplasia, an increase in the urinary excretion of estrogen is found, due to the elaboration of estrogen by the adrenal cortex. In some persons with follicular cysts it is possible to find high levels of estrogen excretion, but this cannot always be relied upon.

Pregnanediol.—Low levels of pregnanediol are found during the follicular phase of the cycle, but as a rule pregnanediol is absent during this phase of the cycle. In anovulatory cycles pregnanediol is ordinarily absent because of the failure of the elaboration of progesterone as a result of the absence of ovulation.

Ketosteroids.—The 17-ketosteroid determinations should always be made on 24 hour specimens, since diurnal variation in their excretion levels is frequent. Ketosteroids are of particular significance in the diagnosis of adrenal and pituitary disease. Their determination is usually indicated to find the excretion level of androgens. While it is true that all 17-ketosteroids are not androgens, it must also be realized that all androgens are not 17-ketosteroids. The determination of 17-ketosteroids does, in most instances, act as an adequate screening procedure. Low levels of 17-ketosteroids are found in panhypopituitarism as in postpartum pituitary necrosis. They are also low in adrenal cortical hypofunction, severe debilitation, and acute illnesses. High levels of 17-ketosteroid excretion are found in adrenal hyperfunction of the cortex and in certain virilizing tumors of the ovary. In one of my patients with adrenal hyperplasia, a marked elevation of 17-ketosteroids was found in association with an acute upper respiratory tract infection of transitory nature.

TREATMENT

There are several causes of the symptom of amenorrhea. Thus, the most logical approach to therapy is one of diagnosis. Once the cause of this symptom has been determined, the treatment is then of the cause. In general, attention should be paid to correcting dietary composition. Most patients with amenorrhea have cognate conditions that indicate diets high in protein and high in vitamin and mineral supplements. Obesity and malnutrition should be corrected. Psychogenic factors and strictly operative conditions should be evaluated and treated appropriately. The endocrine approach to therapy of amenorrhea should also be based upon the cause. Among persons in whom primary ovarian failure has been found to exist, estrogen may be used to produce withdrawal bleeding. In such patients in whom only atrophic endometrium is found, no curative results will be attained. The production of such withdrawal bleeding is carried out for psychological reasons alone.

Estrogen and Progesterone.—Since progesterone acts on the endometrium only under the condition that the endometrium has been previously stimulated by estrogen, the use of progesterone alone in persons with atrophic endometrium would be of no value. Also, in such persons the combination of estrogen and progesterone would offer nothing more than would estrogen alone; however, when anovulatory cycles have been demonstrated and when it has been proved that proliferation of the endometrium has spontaneously occurred, the use of progesterone alone is a rational procedure. Progesterone may be given daily in dosages of 10 mg. for five days during the latter part of such a "cycle." However, Holmstrom (*see this issue, page 580*) has shown that the single intramuscular injection of 25 mg., given on the 24th day of such an anovulatory cycle, will provoke bleeding within a period of four days, and, in some patients, assist in the production of spontaneous ovulation after a few months. Estrogen and progesterone, as noted above, have no special advantage over the use of estrogen alone in producing withdrawal bleeding. In a like manner the combination of estrogen and progesterone offers no advantage over the use of progesterone alone when spontaneous estrogen stimulation has been demonstrated, as in anovulatory cycles.

Cortisone and Thyroid.—Cortisone is of value when the overproduction of pituitary corticotropin has been demonstrated. It is also of value among patients in whom high androgen excretion is noted, as in adrenal cortical hyperplasia. Among persons in whom urinary excretion of 17-ketosteroids is within normal limits, pregnanetriol excretion may be demonstrated at a metabolite of 17-hydroxyprogesterone as an indication of virilization. Thyroid is still the most satisfactory and probably the most widely indicated endocrine preparation available. Its greatest value is in treating patients with true hypothyroidism, as well as those presenting hypometabolism. When the classic picture of hypothyroidism is not present, it is, I think, justifiable to place patients with amenorrhea on small dosage of thyroid empirically. However, I do not subscribe to, nor support, the abuse to which thyroid has been subjected. The gonadotrophins have no practical application in the management of amenorrhea, particularly in view of the fact that no satisfactory gonadotrophic preparation exists.

FUNCTIONAL ILLNESS—MEDICAL ENIGMA

Robert J. Needles, M.D., St. Petersburg, Fla.

Fifteen years ago Dr. William R. Houston presented a paper before the American College of Physicians dealing with the physician himself as a therapeutic agent.[1] He felt that, with the increasing excellence of pharmacological and surgical treatment, many of the older aspects of the relation between physicians and patients were being neglected. The tendencies that Dr. Houston foresaw were in motion then—before most of the sulfonamides, before antibiotics, and before the splitting of atom and adrenal cortex. These tendencies are increasing as a challenge and threat to the medical profession. Physicians tend to ignore the paradox that when they could cure but few ailments they were held in high regard. Now, in an age of therapeutic excellence, physicians are frequently forced to defend themselves against attack. Not many patients complain of what they consider to be satisfactory medical care—a successful operation, the cure of a disease, or relief from pain and disabling fear of ill health. The great number of people who have functional distress form our greatest reservoir of ill will. This problem of ill will or good will is becoming more prominent. There are more public utterances, such as the editorial in *Life* magazine, "Watch It, Doc,"[2] and one hears dark suggestions about the inevitable approach of socialized medicine. Physicians need to devote more time to the study of patients who are seldom cured and infrequently happy or satisfied. These persons talk more of their ailments and their physicians than any other group, perhaps confusing the two. They are forever seeking a cure, and each new miracle of medical science increases their unhappiness, for it seems not to apply to them. They may well form the largest bloc of supporters of government intervention in medical practice. Physicians must, therefore, always be conscious of the imperative necessity of thinking about these persons

---

Read before the Section on General Practice at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 24, 1954.

[1] Houston, W. R.: The Doctor Himself as a Therapeutic Agent, Ann. Int. Med. 11: 1416-1425 (Feb.) 1938.

[2] Watch It, Doc, editorial, Life 34: 32 (June 22) 1953.

and seeking better understanding of physiological misery and ahomeostatic discontent. Lasting relief of functional illness will hardly come from materia medica. Medication does little to solve, in any permanent fashion, the problem of lonely or frustrated men or women with chronic fatigue or misbehaving viscera.

THE PROBLEM

The problem is primarily in the field of therapeutics. It is necessary to be reminded periodically that the practice of medicine does not consist entirely of miracles, magic bullets, or nuclear physics. Gowers' observation is still true. He said, "If every drug in the world were abolished, a physician would still be a useful member of society."[3] The treatment of common disorders of the gastrointestinal, cardiorespiratory, and other organ systems is fairly well in hand. Congestive cardiac failure, for example, is treated much better than it was 20 years ago. Coronary insufficiency is much less frequently dismissed as minor indigestion than it was a generation ago. Functional disease, however, continues to cause endless trouble. No one can clearly outline the field of nervous symptoms. There is no well-recognized pattern of onset or disappearance. The feelings that bedevil the neurotic person are no different than those that all persons may have from time to time. Actually, an entire day spent in explanation, discussion and argument, cajoling and encouraging a series of patients with functional problems is in itself an often frustrating experience for the physician.

Physicians are concerned with the problem of the irritable gastrointestinal tract—characterized by fleeting abdominal pain, increased sigmoid tenderness, and intractable constipation or mucous diarrhea. One wonders occasionally how much time can be left for productive work when so much of the day is spent in producing a "satisfactory" bowel movement. The irritable gastrointestinal tract also manifests itself in upper abdominal distress and gaseous eructations as well as bloating and vague, generalized abdominal fulness. Physicians are likewise concerned with the problem of the premature beat, noncardiac chest pain, nervous shortness of breath, and many cases of paroxysmal ectopic cardiac rhythm. Again, physicians are concerned with insomnia and its close relative, morning fatigue, with anxiety attacks, tension headaches, and excessive concern over common departures from strict normality such as hypertrophic arthritis of the spine. The problem, then, is how best to care for symptoms and how to relieve complaints of distress when no direct act and no direct-acting therapeutic regimen will do the job. No one knows how many patients there are who enter into this problem. Conceivably, it is all patients. A damaged automobile requires restoration and repair and, thus, needs only mechanical skill. Comparable injury to a human being, however, is accompanied by fear of death and loss of income, of the prospect of disability or disfiguration, and concern for the future of loved ones. All these modify and color the therapeutic excellence of the physician's efforts, whether the entrance complaint be laryngitis or leprosy. The problem, therefore, is large, it is common, and it needs further study.

SIGNIFICANCE

The significance of the difficulty, however, transcends the simple failure to cure diseases that, while they seldom kill, frequently cripple the nervous stability that is necessary for sustained work. Thus, if it is admitted that the common cold causes x-million man-hours of loss per year, how many x-million man-hours of useful work are lost by functional disease? More important, how many x-million hours of human happiness are lost? How many homes are disrupted, how many marriages are destroyed, and how many children's lives are tarnished by the presence in the family of one person who is forever ill and forever running to the physician? Possibly I exaggerate, but most physicians agree that there are many persons who complain of aches, pains, and organ misbehavior that physicians cannot honestly say are greatly helped by their efforts in the patient's behalf. Perhaps some persons would rather not face the problem. Beethoven, they say, remained unmoved by the politics of his time. He is described as working in his garden, "sticking to his business and once in a while cursing Napoleon when a stray cannon ball rolled his way."[4]

PRESENT METHODS OF TREATMENT

Much can be said in praise of the present treatment of emotional illness. The careful physician, using time, tact, and technical aids, and teaching the patient the signs and meanings of his symptoms, probably does the most satisfactory job. These methods have recently been well summarized by Watts and Wilbur,[5] but a few points require constant emphasis. First, the treatment should not make the patient worse. Clumsy efforts to probe the subconscious may leave the patient's emotional structures raw and quivering so that he is worse than before. One might even say that, where originally the bemused and unhappy person feared the presence of cancer of the stomach, now he fears he may have been a most horrible and perverted child. Guilt, which is common to all of us, has been suggested or emphasized too frequently. This unhealthy tendency to Freudian inquiry should be left to the experts, and perhaps even used sparingly by them. Second, the probability that functional disease is not primarily the result of a warped childhood should be recognized. It is more commonly the protective veneer that has been applied to mask the soul-searing effect of loneliness, disillusionment, marital infidelity, economic hardship, or any of the many other causes of a lost feeling of community.

Examination.—Third, it cannot be emphasized too often that a thorough examination is necessary. This must start with an unhurried and sympathetic hearing of the story of the illness. Such catharsis is certainly one of the valuable things that physicians can borrow from the terminology and practice of their psychiatrist friends. A thorough-going physical examination should never be avoided. Adequate roentgenographic and laboratory examinations should be insisted on to prove the functional origin of the symptoms. If the physician is not convinced, he will never convince the patient. Most impor-

---

3. Gowers, W., cited by Bauer, J.: Principles of Psychotherapy in General Practice, Ann. Int. Med. 39: 81-91 (July) 1953.

4. Nock, A. J.: Letters, Caldwell, Idaho, Caxton Printers, Ltd., 1949, p. 148.

5. Watts, M. S. M., and Wilbur, D. L.: Treatment of "Functional" Disorders, J. A. M. A. 152: 1192-1197 (July 25) 1953.

tant of all, the situation must be explained to the patient in the most minute detail. He should, if possible, be shown his roentgenograms. This is not to attempt his education in radiology but simply to show him something concrete on which he can fix his renewed confidence. The advice that is given the patient must be in positive terms. No half-way statement, such as "I don't think . . .," may be used. The physician must be willing to assume the risk for making a positive statement. Professional cowardice, the unwillingness to come out flat footed and definitely in regard to the harmlessness of a symptom, is to be condemned in the strongest terms. No patient should ever be told that his illness is in his head or that there is nothing the matter with him. To say this marks the physician as a fool in the mind of the patient. It should be recognized that, except for a small minority, patients do not invent symptoms; they have them. What physicians need to do is to recognize and admit the patient's distress and then explain it on the sound basis of organ misbehavior. Simple examples of such misbehavior are part of the common experience of mankind—nervous loss of appetite, reflex vomiting, or loss of elimination control after fright or shock, cardiac palpitation, tension headaches—everyone knows of these things, but it seems that in many cases only a physician, after enough thought and care to justify such a conclusion, can lead the patient into an understanding of his symptoms on the basis of his nervous system playing tricks on him. Thus, recognition of the reality of distress, followed by positive and well-founded reassurance, remains the best weapon.

Drug Therapy.—Fourth, drug therapy should be used when necessary, and the reasons for treatment should be made clear. I find it useful to compare harmless stimulant or sedative medication to eyeglasses or dentures; they are simply a method of reinforcing the body in a vulnerable area. Mild sedation is probably no more habit forming than bifocal glasses. It does seem a little cruel to subject a patient to an exhaustive examination only to turn him loose to fend for himself, unaided except by advice. Overtreatment should be guarded against. Elective surgery should be most carefully studied, perhaps avoided. Physicians should infrequently allow removal of an atonic, though stoneless, gallbladder, a so-called chronic appendix, or a harmless uterine fibroid in a woman before the menopause. Injections of liver extract, or vitamins, or hormones may prolong the emotional problems for years. There is an occasional patient who rallies during, though probably not because of, a series of injections of various vitamins. Before the recent war the favorite was B_1. Just now it is B_{12}. When one contemplates the alphabetical and numerical possibilities of the future, one is fascinated with the prospect. When the promise of one miracle has worn thin, a new one is sure to be developed. Few patients are ever cured by such pseudomedicine. Many, indeed, become worse, so that their eventual rehabilitation becomes much more difficult.

From the well-meant, but misdirected, efforts of ununwise surgery or "shot" therapy, it is not very far to outright quackery, and the cults have prospered. Twisting spines and attaching wires to flashing lights in black boxes are inevitable camp followers of the present treatment-by-injection segment of our profession. It is probable that cults could not have thrived were it not for the failure of the medical profession to recognize and treat functional illnesses for what many of them are, personality or environmental disorders and not organic diseases. Patent medicines, while always available, have also mirrored the medical profession's inadequacies. Only a population liberally sprinkled with the physician's therapeutic failures could have purchased so many millions of bottles of a recent quack vitamin mixture.

REASONS FOR FAILURE

Certain characteristics of this group of functional illnesses may be responsible for the physician's lack of success in their treatment. First, the care of a nervous or functionally ill person requires much time, and proper evaluation may require endless hours. It is not that physicians necessarily object to spending this time, but they find their time is more and more occupied with the necessity for earning a living. Everyone is rushing down the road ahead of the tax collector, and most physicians have entirely too little time for the human side of medicine. To date, little attention has been paid to the medical profession's need for a method of providing better personal retirement insurance. Second, physicians are often impatient with these persons because of the tendency of symptoms to recur. They seemingly neither deteriorate nor get any better. All physicians are pleased with good results and distressed with failure. The patients, themselves, have a disagreeable effect on the physician. Physicians, like families, become bored with constant rehearsing of the same symptoms, and the physician is apt to feel helpless in the face of continued failure.

Third, and perhaps the most important among the reasons why many patients with functional diseases do not recover satisfactorily, is the absence of patient cooperation in the treatment of the condition. This absence of cooperation is not necessarily in the patients' failure to come back for return visits from time to time. This they do perhaps more faithfully than any other group. Nor is it to be blamed upon their failure to take certain medicaments that may be prescribed. This patients with functional illness do quite faithfully. Their greatest failure is in their inability to follow a program that involves anything more than the simple taking of medicine or visiting the physician. They need new and stimulating opportunities to channel tension into useful work or play, and the inability on the physician's part or their part to direct or find such activity is one of the chief stumbling blocks in the proper treatment of their condition. These new and stimulating opportunities must be furnished from outside the medical profession.

A NEW APPROACH

Therefore, remembering the mounting ill will that has been mentioned, physicians may be wise to enlist themselves actively in the search for new sources of help. Precedent is not lacking for such a move. A few generations ago typhoid constituted a great health problem, and the medical profession took the lead in its control. My feeling is that a valid correlation exists here. Not many, so I am told, accused physicians of causing typhoid, and the public shared in sympathy the anguish of physicians as they struggled to save victims of the fever. In this new pestilence, physicians are, likewise, not being charged with its dissemination. Few will deny, however, that physicians are being loaded, in an increasing manner, with responsibility for failure. Now, just as in typhoid fever, physicians must reassert their innocence of causation, and I would suggest a new public relations approach. Physicians should point out that the miseries they discuss are the result of social environment. One surely recognizes the fact that the political clamor during the last few decades has had a profound effect on everyone. While it may be true that a physician should not lecture on politics, it is even more true that when politics has made medicine its business, it is the physician's duty to speak out. Political philosophies do little to increase friendship between groups of people, physicians and their patients included. Half-educated boys have been allowed to engineer changes of the most profound nature in man's relation to his government. Sense of continuity with the past, both in government and family, has been ignored, scorned, or perverted. In an excellent recent book, Nisbet says, in quoting C. W. Mills, "The uneasiness, the malaise of our time, is due to the fact that in our politics and economy, in family life and religion, in practically every sphere of our existence, the continuities of the 18th and 19th centuries have disintegrated or been destroyed, and at the same time no new knowledge for the new routines we live and must live has taken hold. The malaise is deep rooted, for the absence of any order of belief has left men morally defenseless as individuals and politically impotent. They have no culture to lean upon except the contents of a mass society that may shape them and seeks to manipulate them to its own ends."[6] A good point can be made for the thesis that much of the illness seen today is the result of a loss of community—that is to say, a loss of old values, old taboos, old restrictions, and old prejudices that used to confine moral behavior—and to the family and community support that used to bolster persons in times of emotional stress. If these things are true, physicians' puny efforts with pills and injections will be of little value. There should be promise, however, in a realization of the problem and in a new approach.

TYPE OF HELP NEEDED

The emphasis, then, should be on the help needed to lead persons to better understanding of life away from physicians' offices. Too many persons have been uprooted from their environment or have lost the sources of the reassurance that keeps persons in emotional balance. Many of them need only to reestablish themselves in a group to find again the reinforcing benefits of friends and neighbors. In these cases the church may help, but a good deal more could be done along this line. Clubs and lodges supply help also. More than these, facilities and techniques for the development of new interests and new skills are needed. In the days when the largest piece of farm machinery was a wooden plow every man could be his own craftsman. The recently criticized bigness in corporate structure has become a practical necessity. The village blacksmith could not be expected to manufacture transport aircraft or bulldozers. This necessary emphasis on bigness has tended to crowd the person skilled in the use of his hands into the background; therefore, when a person who has spent his active working years on an assembly line or in routine sales or office work is no longer employable in such a fashion, he has little on which to fall back in his need for useful activity. There is a steady diminution in hours of work in industry and in the home. Most persons are thus released from their breadwinning or homemaking tasks for many hours weekly. The general impression is that a sizeable group thus emancipated busy themselves killing each other off on the highways. Others have turned to television or the more spectacular pastimes induced by alcohol. It is possible that some, at least, would interest themselves in developing new skills and hobbies if such could be made available. A sense of personal achievement is not readily perceptible in mass production industry. One need not emphasize the virtue of handicrafts in the therapy of emotional disturbance. Surely it is known that keeping busy, within the physical limits imposed by illness or age, is a valuable practice. There is increasing emphasis on adult education in the United States, but this is mostly in scholarly subjects and little notice is given to reeducation in tension-relieving work. What would help all persons to an extent hardly predictable would be a recognition of this problem by a nongovernment authority. I need give only one example of such an activity, that of the Carnegie free libraries that dot the United States. Here is an example of practical philanthropy of the greatest potential good. Many persons gained their first knowledge of books, their first glimpse of the world outside, in the quiet shelter of their home town library. The same idea could be applied to the development of local craft and hobby centers. Too much is said of social security, of pensions, and of geriatrics, and not enough practical effort is being devoted to the most necessary thing, giving persons something to do, something they can do themselves, something that will not only serve to take their minds off their internal rebellions but will actually produce a visible and soul-satisfying result.

SUMMARY

The medical profession, with all its progress, needs outside help on the problem of emotionally ill, displaced, abandoned, chronically unhappy, or otherwise handicapped persons. Physicians can suggest, they can advise, they can warn, but they cannot go with these persons into the community and lead them into new interests and new drives to demonstrate reasons for living. This is, and must be, the responsibility of society. There is too much wastage of human resources in the communities' own back yards. Practical and interesting demonstrations of how best to use increasing amounts of leisure time are needed. Not only would this help to reduce the amount of functional disease, it would also help to remove a potential threat to the private practice of medicine. Physicians should not cease to attack the life-threatening diseases, but they need to recognize how

---

[6] Nisbet, R. A.: The Quest for Community, New York, Oxford University Press, 1953, pp. 72-73.

many persons there are who have not been helped by drugs or surgery and how greatly they suffer. Too many persons today tend to blame physicians for failure to cure emotionally ill persons. Physicians do attempt the care of these persons, but their efforts are inadequate. The medical profession should stimulate renewed inquiry into the causes of functional disorders. Physicians should not sit back and assume the blame for failing to cure persons with functional illness nor expect them all to seek the analyst's couch. Physicians should, instead, point out that the trouble may be with society, with man's conversion into a modern wanderer uprooted from his past, his old assurances and prejudices washed away and not replaced by new solidity. Persons come in increasing numbers to physicians' offices and, in many cases, turn away in despair. It seems a bit foolish for physicians to castigate themselves and allow others to castigate them for the emotional illness of a sick society. Physicians should assert the fundamental nature of the problem and, by doing so, aid in the elimination of this modern pestilence.

627 11th St., N.

ANESTHESIA FOR NEUROSURGICAL PROCEDURES

John E. Osborn, M.D., Rochester, Minn.

Anoxia, swelling of the brain, and excessive bleeding create the greatest dangers to successful neurosurgical procedures. Anoxia starts a vicious cycle by causing increased permeability of the capillaries, which results in loss of fluid into the tissues, and this, in turn, leads to greater degrees of tissue anoxia. Increased volume of the brain may be caused by cerebral edema or vascular engorgement and necessitates more retraction by the surgeon to expose the operative field correctly. Excessive bleeding also results in cerebral edema, obscuring of the surgical field and, consequently, greater cellular damage. The prevention of anoxia and cerebral edema is the main goal of the anesthesiologist; the problem of bleeding remains the concern of the surgeon.

Neurosurgery presents problems in anesthesia that are not confronted in other types of surgery. In this type of surgery patients are seen who are in varying degrees of consciousness; some have increased intracranial pressure, while others have tumors so located that vital functions are in constant jeopardy. These conditions may exist singly or in combinations. The anesthesia requirements for neurosurgical patients are different, also. For the surgical procedure, only light anesthesia is required, without consideration of muscular relaxation. Anesthesia should be carried at a light plane so that the patient awakens shortly after the operation is over. This allows the surgeon to check movements of the extremities and other vital signs; however, anesthesia must be of sufficient depth to prevent any reaction to the endotracheal tube. Moreover, electrocoagulation is in almost constant use by the surgeon, and, therefore, an anesthetic agent that eliminates or reduces the hazards of fire and explosion must be chosen. In no other type of surgery is the patient's air passage so inaccessible, once the tables and drapes are in position, as in cranial surgery; therefore, an absolutely patent airway, without danger of obstruction, must be insured before the operation is started.

POSITION OF PATIENT

Often the patient's position makes the anesthesiologist's task more difficult. The patient must be placed so that the surgeon will have the clearest view of the operating field and the best approach, although, technically, it may be difficult for the anesthesiologist to maintain normal cardiovascular and respiratory physiology.

Prone.—If the prone position is to be used, the patient must be placed on padded rolls or sandbags in such a way that the shoulders and hips are raised off the operating table. This will insure adequate excursions of the thorax and abdomen during the respiratory exchange. The use of a pillow under the lower part of the abdomen to reverse the anatomic lordosis in facilitating operations on disks[1] not only restricts the excursions of the diaphragm but also causes pressure on the vena cava, and the amount of venous blood returned to the heart is decreased. Concurrently, there will be engorgement of the vertebral venous plexus and increased bleeding in the operative field. The prone position, with the neck flexed and the face in a horseshoe-shaped support, often is used for laminectomies on the upper cervical vertebrae and for operations on the posterior fossa. Whenever the neck is flexed, the danger of the endotracheal tube becoming kinked is constant. This difficulty has been circumvented by the use of plastic endotracheal tubes that do not kink on sharp angulation. Another danger that must be overcome is the exertion of pressure on the eyes by the face piece. As pointed out by Hollenhorst and others,[2] prolonged pressure on the eyes may cause permanent injury.

Sitting.—When the sitting position is used, the cardiovascular system may be embarrassed unless certain precautions are taken. At the Mayo Clinic one of two different pieces of apparatus is used to position the patient, namely, the Craig[3] headrest or the Adson[4] chair. When the Adson chair is used, the possibility of severe pooling of blood in the lower extremities is always present; a decrease in cardiac output follows a decrease in the volume of venous blood returned to the heart. Because of this, the maintenance of normal blood pressure may be difficult at times, and if marked hemorrhage

---

From the Section of Anesthesiology, Mayo Clinic, and the Mayo Foundation, University of Minnesota Graduate School.

Read before the Section on Anesthesiology at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 23, 1954.

[1] Hunter, A. R., and Hewer, A. J.: The Present Position of Anaesthesia for Neurosurgery, Proc. Roy. Soc. Med. 45:427-434 (July) 1952.

[2] Hollenhorst, R. W.; Svien, H. J., and Benoit, C. F.: Unilateral Blindness Occurring During Anesthesia for Neurosurgical Operations, Unpublished data.

[3] Craig, W. McK.: A Neurosurgical Head Rest for Use in Army and Navy Hospitals, J. Neurosurg. 1:163-165 (May) 1944.

[4] Adson, A. W., and Little, G.: Upright Cerebellar Frame, Proc. Staff Meet., Mayo Clinic. 9:481-484 (Aug. 8) 1934.

occurs it is impossible. To overcome venous pooling, the legs should be wrapped from the foot to the thigh with elastic bandages. Another danger is that of curtailment of thoracic expansion that may occur if the patient is strapped tightly in the Adson chair, especially if the straps are placed about the thorax. The Craig headrest overcomes the possibility of venous blood pooling in the extremities if it is correctly utilized. This means that the lower extremities should be on a level with the heart. There is no limitation of respiratory excursions when this position is used. Another hazard inherent to the sitting position is that of air embolism. The pressure within the veins of the cervical region and within the cranium may be subatmospheric, and, when they are opened, air may be sucked in. This has not been a major problem at the Mayo Clinic, since the neurosurgeon uses extreme care to cover and coagulate or tie any open vein immediately.

MEDICAMENTS

Medicaments to be used prior to intracranial operations present numerous problems. For many years most anesthesiologists have been taught that morphine sulfate or morphine-like products should not be administered to neurosurgical patients. Morphine was supposed to increase intracranial pressure per se, and, therefore, its use was contraindicated. It is my feeling that this is not essentially true, but rather that morphine, in large doses, depresses respiration and produces hypoxia and hypercapnia. These, in turn, cause increased intracranial pressure. A great increase in intracranial pressure, as shown by papilledema, contraindicates the use of morphine and like substances; however, patients who do not show any evidence of choked optic disks should not be denied small doses of morphine or similar drugs. The administration of opiates before operation will assure a smoother induction of anesthesia and a smaller total dosage of the main anesthetic agents. If generalization for preoperative medication can be made, I suggest that one of the short-acting barbiturates should be given the evening prior to surgical intervention and the morning of the operation. This should be followed by a dose of atropine, with or without morphine, as the case warrants.

LOCAL ANESTHESIA

Local anesthesia is excellent for cranial operations. If possible, morphine and scopolamine hydrobromide are given to the patient to insure a more comfortable and painless operation. The use of scopolamine rather than atropine is advised at the Mayo Clinic because of its additional sedative effect. It is felt that patients who are in coma should not be given a general anesthetic, and, therefore, under these circumstances, local anesthesia becomes the method of choice. Those patients who are tranquil and stoic also are good candidates for craniotomies under local anesthesia. When a scalp block is done, the anesthesiologist must be sure that the infiltration is carried out through three definite levels: intradermally, subcutaneously, and intraperiosteally.[5] If there is danger that the comatose patient will lose his airway, then it is well to intubate him under topical anesthesia before surgical procedures are begun.

GENERAL ANESTHESIA

Ether is still one of the chief anesthetic agents used for neurosurgical patients. Anesthesia can be induced either with thiopental (Pentothal) sodium or with nitrous oxide and oxygen. Since the combination of ether and oxygen is highly explosive, drop ether alone should be used in the operating room. I have found that this is a safe agent, even with electrocautery. The barrier of drapes, towels, and rubber sheeting between the operative field and the face of the patient makes this an acceptable agent. Care must be exercised to insure adequate oxygenation when air-ether mixtures are used. Faulconer and Latterell[6] have pointed out the ease with which inadequate oxygenation is brought about by the drop ether technique.

The Mayo Clinic philosophy concerning general anesthesia for neurosurgery has changed markedly during the past two years. Until that time, the vast majority of patients received ether for general anesthesia. Since that time, there has been a marked swing toward the use of thiopental, nitrous oxide, and oxygen as the chief general anesthetic agents. The main reason for this change is that oxygen can be administered continuously to the patient; therefore, the induction of anesthesia is smooth and easy, without coughing or straining; the patient can be readily kept at a light plane of anesthesia; and the patient is awake, or nearly awake, shortly after leaving the operating table. Just as vitally important is the decidedly lower incidence of postoperative nausea and vomiting.

One of the chief complaints against the use of thiopental as the anesthetic agent for neurosurgical procedures is that the patient is more apt to cough or "buck" when the endotracheal tube is inserted. As the technique used at the Mayo Clinic has been continuously improved, there has been a smaller and smaller incidence of these episodes. We use curare to obtain the relaxation needed for the intubation. A test dose of 3 mg. of *d*-tubocurarine, plus 2 cc. of a 2.5% solution of thiopental is given. If, after one or two minutes, the drug does not produce any untoward effect, an additional dose of 9 to 12 mg. of curare is given and just enough thiopental, 4 to 5 cc., to make the patient unaware of the curarization. Since it takes curare about five minutes to reach its optimal effect, there is another waiting period. After this the patient is given a rather large dose, 15 to 20 cc., of thiopental, and the throat and larynx are thoroughly sprayed with a 10% solution of cocaine. At least a minute is allowed for the cocaine to take effect before the endotracheal tube is inserted under direct vision. Only in a few patients has this dose of thiopental caused apnea, and at no time has it proved to be troublesome. Intermittent doses of thiopental plus a three to one mixture of nitrous oxide and oxygen are used for the rest of the operation. If the patient appears to require an excessive amount of thiopental during the procedure, a small supplemental dose of morphine or meperidine (Demerol) hydrochloride is given intravenously. Occasionally, a patient will tend to cough after the endotracheal tube has been inserted. The administration of a small amount of ether, 0.25 to 0.5 oz. (7.09 to 14.18 gm.), prior to the operation will quiet the cough reflex. An intracranial procedure cannot be considered to be safe if an endotracheal tube is not in place. Although, initially, the anesthesia must necessarily be deep for the introduction of the tube, this questionable hazard is more than compensated for by the added safety of a clear, controlled airway.

---

[5] Lundy, J. S.: Clinical Anesthesia: A Manual of Clinical Anesthesiology, Philadelphia, W. B. Saunders Company, 1942, p. 78.

[6] Faulconer, A., Jr., and Latterell, K. E.: Tensions of Oxygen and Ether Vapor During Use of the Semi-Open Air-Ether Method of Anesthesia, Anesthesiology **10**: 247-259 (May) 1949.

In using thiopental as the main anesthetic agent, the pharynx, larynx, and, if possible, the upper part of the trachea should be thoroughly sprayed with cocaine. Since thiopental does not obtund the throat reflexes, topical anesthesia is the only means of abolishing or depressing them. Care should be taken to insure the use of an endotracheal tube of the correct length. Ideally the tube should extend only about 1 to 1.5 in. (2.54 to 3.81 cm.) beyond the vocal cords. If a tube is too long it may touch the carina and cause prolonged bouts of coughing. Excessively long tubes may even enter one of the main bronchi and cause atelectasis of the opposite side. If the lesion is located in the posterior fossa, or high on the spinal cord, care must be used when intubation is performed. The head should never be extended during the intubation, as this may cause tonsillar herniation or may damage the cervical portion of the spinal cord.

INDUCED HYPOTENSION

The number of cases in which we have used induced hypotension has been purposely small. It has been my feeling that hypotension should be utilized only when it is absolutely indicated. If, after consultation with the neurosurgeon, it is felt that excessive or uncontrolled bleeding caused by the surgical procedure may jeopardize the patient's life, then I feel that the use of a hypotensive agent is warranted. Those patients who have been shown to have severe cardiovascular or renal damage have been excluded as candidates for induced hypotension. There has not been any untoward effect from the use of the hypotensive technique. In no case has the level of the diastolic pressure been purposely taken below 70 to 80 mm. Hg. I consider levels below this to be hazardous, and they do not necessarily contribute to any additional improvement in the operative field. Replacement of blood during hypotension must be as exacting as possible. A normal volume of circulating blood is the only physiological means the body has to maintain adequate blood pressure in the face of loss of sympathetic control. I have used both hexamethonium bromide and trimethaphan (Arfonad) camphorsulfonate as the hypotensive agent, and, although I have not had any difficulty with either one, I feel that trimethaphan is easier to control.

Many times the anesthesiologist is able to assist the neurosurgeon in making a diagnosis. By blocking the cervical or lumbar sympathetic nerves the anesthesiologist may be able to prove or disprove the efficacy of proposed surgical procedures. Diagnostic blocking of somatic nerve roots to determine relief of pain may be of benefit to the neurosurgeon in deciding whether to perform rhizotomy or chordotomy. In some cases the patient may not be a suitable candidate for operation, and the anesthesiologist may attempt permanent relief by injecting alcohol into a specific nerve or sympathetic ganglion. It should be kept in mind that whenever alcohol is injected there is always the danger of producing alcohol neuritis, and, therefore, its use should be limited. Roentgenology has been a boon in exact placement of needles, both for diagnosis and therapy.

SUMMARY AND CONCLUSIONS

Anoxia, the perpetual bugaboo of the anesthesiologist, causes constant concern during neurosurgical operations. It not only has the same general effect as with other patients but also perpetuates increased intracranial pressure by producing cerebral edema. The anesthesiologist, therefore, attempts to eliminate anoxia episodes, insofar as possible, by giving oxygen continuously throughout the operation. The administration of thiopental, nitrous oxide, and oxygen and the use of an endotracheal tube have resulted in safe, easily handled, and efficient anesthesia. Morphine and similar opiates should not necessarily be eliminated from preoperative medication. Morphine has proved to be an excellent medium to reduce the total dose of the main anesthetic drug. Induced hypotension is still in its infancy, and, although it is of value in selected cases, indiscriminate use may prove disastrous and lead to its abandonment.

102 Second Ave., S. W.

CLINICAL NOTES

SPECIFIC VASCULAR CHANGES IN GOUT

Eugene F. Traut, M.D., Oak Park, Ill.
Alva A. Knight, M.D.
Paul B. Szanto, M.D.
and
Edwin W. Passerelli, M.D., Chicago

Arterial disease is respected as an inevitable as well as the most serious complication of gout. Barring accident or other common hazards, the patient afflicted with gout will die directly or indirectly of changes in his circulatory apparatus. Formerly, gouty lesions were ascribed to arterial changes; this opinion is no longer held. Hyperuricemia is not believed to be the cause of the vascular changes. Instead, the underlying, unknown cause of the other manifestations of gout is thought to induce the arteriosclerosis.

Discovery of urate in the arteries or in the heart adds specificity to the cardiovascular changes. Urate crystals in blood vessels or in the heart were reported by the earliest writers. The authenticity of these reports has been doubted, notably by Minkowski.[1] Deposition of urates in the vessel walls and in the heart valves is regarded not as the cause of the tissue changes but rather as an accompaniment of the alterations in the blood vessels. Of course, degeneration in the arterial walls and in the valves may favor the collection of urates.

Dr. Kenneth M. Campione assisted in the preparation of this paper

From the Departments of Medicine and Pathology of the Presbyterian Hospital of Chicago and of the Cook County Hospital and from the Hektoen Institute

[1] Minkowski, O.: Neue deutsche Klinik, Berlin, Urban & Schwarzenburg, 1930, p. 220

In two recent autopsies on patients who died of unmistakable gout, urates were found in arteries and in the valves and muscle of the heart. The two cases in this report are remarkable not only for the pathological vascular conditions seen; they also represent the only cases of gout described in the autopsy protocols of two large hospitals. The first patient was the single patient listed as dying of gout in the protocols of the Presbyterian Hospital of Chicago. The second patient was the only patient with gout recorded in the 10,036 autopsies dating from Jan. 1, 1945, through Sept. 15, 1952, at Cook County Hospital. Descriptions of rheumatoid arthritis and degenerative arthritis were correspondingly sparse.

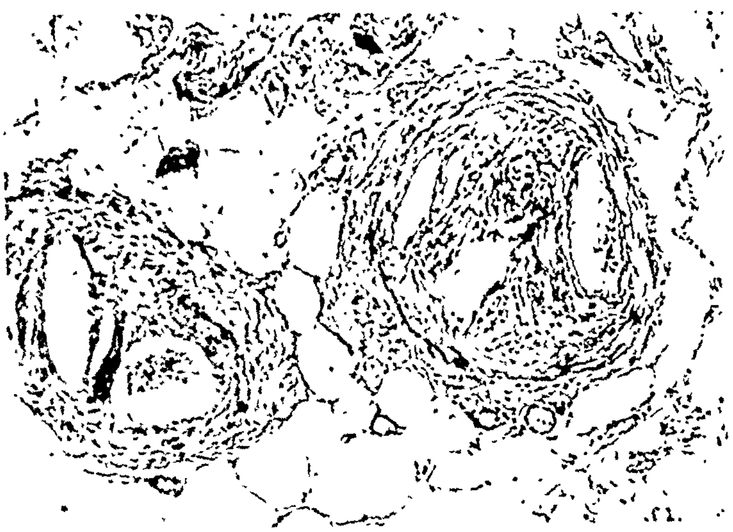


Fig. 1.—Photomicrograph (low power) showing two arteries in the submucosa of the colon in a patient with gout. Clefts indicate the position of crystals.

Gout is primarily a disturbance of function that only secondarily shows itself by an alteration of structure. Thus gout is primarily a clinical disease and only occasionally recognized by pathologists. In this respect gout is similar to another disturbance of metabolism, diabetes mellitus. Deaths in patients having gout are likely to be filed under the name of the disease regarded as causing death, such as nephritis, arteriosclerotic or hypertensive heart disease, or cerebrovascular accident. Prosectors apparently pay little attention to joint disease while concerning themselves with the contents of the great cavities of the body. This failure to describe skeletal changes may in part be ascribable to the legal restrictions on postmortem incisions in the extremities.

Case 1.—The patient was a 50-year-old man of English ancestry. He had had arthritis due to gout for 12 years. He characterized himself as a heavy eater of meat and a good drinker. He was admitted to the Presbyterian Hospital seven times between 1944 and 1951 for acute arthritis due to gout, excision of 31 gm. of urate from a great toe joint, coronary thrombosis, cardiac failure, and, finally, rupture of an abdominal aneurysm. His blood pressure ranged from 150/100 to 240/140 mm. Hg. He had marked albuminuria, and his plasma uric acid level varied from 7.8 mg. per 100 cc. to 13.1 mg. per 100 cc.

At autopsy the body showed tophi measuring 6 cm. in diameter in the metatarsophalangeal articulation of each great toe. Smaller tophi were seen in the elbows and wrists and in the external part of the ears. The abdomen was distended. Besides the gouty tophi with urate crystals, other findings were portal cirrhosis of the liver, nephrosclerosis, cholelithiasis, infarction of the myocardium, marked arteriosclerosis, and a rupture of the aorta. Unfortunately, the tissues removed were fixed in aqueous solutions rather than in alcohol.

Two arteries (fig. 1) in the submucosa of the colon showed mild fibrosis of the media with partial disruption of the internal elastic membrane. There was continuity of fibrocellular tissue between the media and the lumen of the vessel. The latter had been occluded by a thrombus, which had undergone organization. In the loose-textured connective tissue between the vascular channels in the organized thrombus there were several cleft-like spaces indicating the position of crystals dissolved from the tissues. The exact nature of the crystals formerly occupying these spaces was not clear. The spaces did not, however, have the appearance of crystal clefts indicative of cholesterol or esters of cholesterol. There were no foamy macrophages in the neighborhood of the clefts or elsewhere in the fibrous tissue between the newly formed vascular channels.

In an artery (fig. 2) located in fat tissue between lobules of pancreatic glandular tissue there was a mild, chronic, inflammatory reaction in the adventitia. The smooth muscle of the arterial wall had largely been destroyed. The internal elastic membrane could not be recognized. There was an extensive, granulomatous, proliferative reaction involving a large part of the media and the fibroelastic tissue and obliterating a large part of the lumen of the vessel. The residual lumen of the vessel or a channel resulting from organization of a thrombus could be seen to the right. The granulomatous reaction was to the left. In the area of granulomatous proliferation there were fibroblasts and multinucleated giant cells. Very delicate crystal clefts could be seen in the homogenous material surrounded by the fibroblasts and giant cells. The clefts here closely resembled those that occur in foci of urate deposition in gout; however, identity of the crystal clefts with those produced by urates was not established. The resemblance was convincing.

Crystals (fig. 3) were found in hyalinized connective tissue of a thickened intima in a coronary artery. The crystals have not been identified as urate crystals. The crystal structure is in keeping with that of urates. It is believed that they resisted solution in the aqueous fixative because the locus in which they were found was a calcified zone.[2]

Case 2.—The patient was a retired contractor of German extraction. At his first admission to Cook County Hospital he was 74 years old and had had arthritis due to gout for 40 years. The joint swellings would at first disappear with warm weather. Sinuses that discharged yellow and white chalky material had developed in two toes. He had been a heavy beer-drinker as an adult. There was no joint disease in his antecedents.

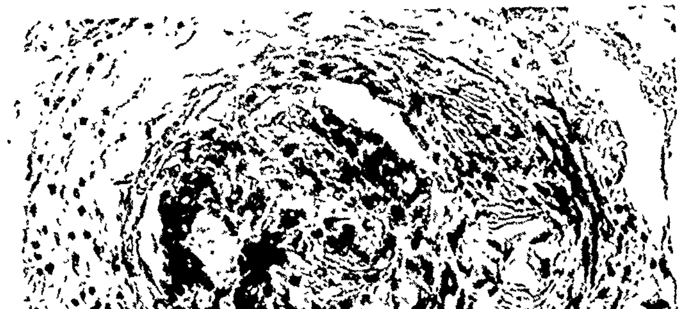


Fig. 2.—Photomicrograph (medium power) showing cross section of an artery. Crystal clefts are surrounded by fibroblasts and giant cells in the wall of the artery.

The joints of the fingers and toes were deformed by large, hard swellings. There was a hard deposit 0.5 cm. in diameter in the helix of the right ear. The patient's blood pressure was 150/100 mm. Hg. He had proteinuria. The uric acid in his blood measured 7.8 mg. per 100 cc.; the nonprotein nitrogen was 50 mg. per 100 cc. The electrocardiogram showed flattened T-waves and premature auricular beats.

---

[2] Dr. George M. Hass gave the description of the three photomicrographs.

The patient had flaccid paralysis of his legs and complete loss of bladder and bowel control before his death. The paraplegia was found, at autopsy, to be due to osteosarcoma of the spine developing in osteitis deformans (Paget's disease). Death was due to pyelonephritis.

Typical crystals of sodium biurate were isolated from the tophus in the helix of an ear. A section through the metatarsophalangeal joint of the fifth toe on the right foot showed urate deposits destroying the bone to produce punched-out lesions. Each kidney weighed 150 gm. and showed the typical picture of arteriolonephrosclerosis. The surface of each kidney was uniformly granular. The cortex was narrowed. The corticomedullary borderline was sharp. Microscopically, there were hyalinized glomeruli with thickening of the vas deferens.

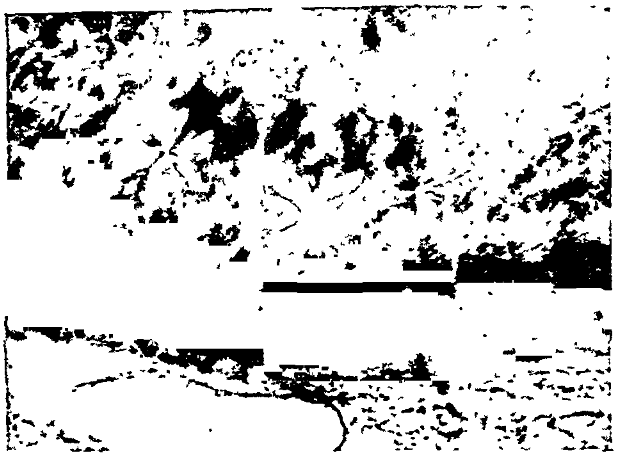


Fig. 3—Photomicrograph of clefts in the wall of a coronary artery in a patient with gout The photomicrograph was taken with polarized light at high power.

The heart was normal in size and shape. The coronary arteries were sclerotic. The undersurfaces of the mitral leaflets showed deposits of chalky material (fig. 4) extending down over the parietal endocardium. This material reacted positively to Weidel's (murexide) test. The margins of the aortic cusps were thickened with an amorphous material.

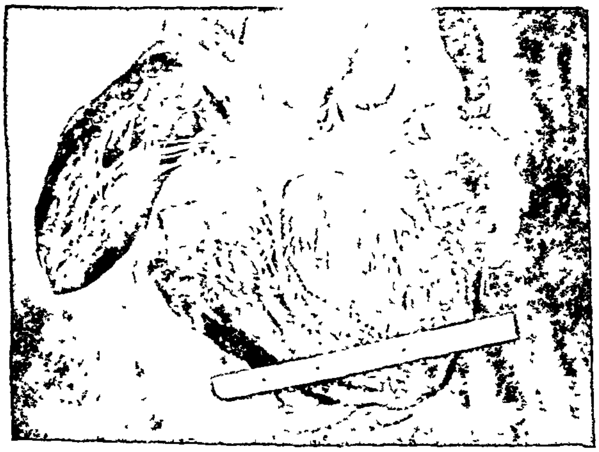


Fig. 4—Photograph of specimen showing chalky material extending from the lower surface of a mitral leaflet along the parietal endocardium. Thickened aortic cusps are seen.

Microscopically, a mitral leaflet showed a bulbous thickening due to deposits of amorphous eosinophilic material. Under higher power, calcification was found in this amorphous material.

CONCLUSIONS

The study of the arteries in the first case indicate deposits of crystals either in the proliferated intima of arteries or in organized thrombi. The general form of the crystals and the pattern of the clefts that remained in areas from which crystals had been dissolved strongly suggest the probability of urate deposition. The second patient had the usual nonspecific arteriosclerotic changes so prominent in gout. In addition, unusual accumulations of urates were demonstrated in the heart ("visceral gout").

In 1940, Bunim and McEwen[4] found eosinophilic amorphous material in a bulbous thickening of a mitral leaflet of a patient with gout. The material gave positive chemical reactions to tests for uric acid. The mass was surrounded by foreign body giant cells as in typical tophi. The histopathological findings in our first case show similar evidences of cellular inflammatory reaction. In the second case, however, multinucleated giant cells were not seen. This might lead to an assumption that the urates were deposited in the excresences of endocardiosis. Evidence against such an idea is the finding of the lesion in the pocket and the involvement of the parietal endocardium. It is hoped that this paper will lead to careful scrutiny of the viscera in bodies that show evidence of joint disease and the use of absolute alcohol as a fixing solution for tissues removed from patients who possibly had gout.

715 Lake St. (Dr. Traut).

---

[3] Lillie R D: Histopathologic Technique, Philadelphia, Blakiston Company, 1948, p. 251. Schultz, A.: Zur Frage der Beziehungen zwischen Leukamie und Gicht. Zugleich Mitteilung histologischer Darstellungsmethoden der Harnsäure und der Urate, Virchows Arch. path. Anat 280: 519, 1931.

[4] Bunim, J. J, and McEwen, C: Tophus of Mitral Valve in Gout, Arch Path. 29: 700 (May) 1940

HEPATOPORTAL ARTERIOVENOUS FISTULA

Gordon F. Madding, M.D., San Mateo, Calif.
William L. Smith, M.D.
and
Lloyd R. Hershberger, M.D., San Angelo, Texas

One of the most hazardous types of bleeding from the gastrointestinal tract is that occurring from esophageal or gastric varices. Such varices usually arise following an obstruction to the return of portal blood to the systemic venous system. There are two common types of portal obstruction: that occurring in the liver—the so-called intrahepatic type—and that seen in splenomegaly (Banti's syndrome), in which the portal vein is obstructed. The latter is referred to as the extrahepatic type. In addition Linton[1] has described portal hypertension occurring secondary to a combination of the above two lesions.

We would like to suggest that the lesion presented by the patient in this report represents an additional situation in which portal hypertension may develop, i. e., secondary to an arteriovenous fistula between the hepatic artery and portal vein. This case is the second to be recorded in the literature. The first was reported by Strickler, Lufkin, and Rice.[2]

---

[1] Linton, R. R.: Surgical Treatment of Bleeding Esophageal Varices by Portal Systemic Venous Shunts with Report of 34 Cases, Ann Int. Med. 31: 794 (Nov) 1949.

[2] Strickler, J. H.; Lufkin, N., and Rice, C O: Hepatic Portal Arteriovenous Fistula: Case Report, Surgery 31: 583 (April) 1952.

The patient on whom we are reporting showed evidences of portal hypertension as manifested by enlargement of the portal vein, congestive splenomegaly, and gastrointestinal hemorrhage of a severe degree secondary to esophageal varices.

REPORT OF A CASE

A 48-year-old white man was first seen by one of us (W. L. S.) in February, 1952. The patient gave an 11 year history of stomach trouble. In 1944, an x-ray diagnosis of duodenal ulcer had been made and treatment instituted. The patient had had recurrent episodes of ulcer distress from that time until his present admission on Feb. 27, 1954, when he was admitted to the hospital in a state of shock. The patient had had a severe hematemesis at his home one hour prior to his admission to the hospital. During the past two years a sense of fulness associated with nausea and vomiting had been the patient's chief complaint. Pain had not been a prominent symptom during this period.

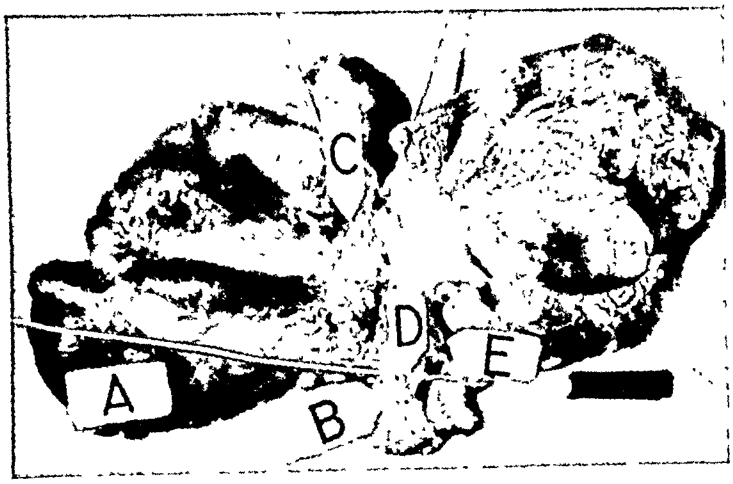


Fig. 1.—Gross specimen of the liver, reduced slightly more than one-fifth. The horizontal probe extends from the hepatic artery over into the portal vein. *A*, gallbladder; *B*, hepatic artery; *C*, common duct; *D*, fistula; and *E*, portal vein.

At the time of admission the temperature was 101.2 F, pulse rate 108 beats per minute, respirations 24 per minute, and blood pressure 70/50 mm. Hg. Treatment for shock was given, and the next day laboratory findings showed a hemoglobin level of 11.5 gm. per 100 cc. and a leukocyte count of 24,700 per cubic millimeter with a normal differential count. The nonprotein nitrogen level was 84 mg. per 100 cc. The sulfobromophthalein (Bromsulphalein) retention test showed 49% retention in 5 minutes and 8% retention in 45 minutes. Urinalysis showed no abnormalities.

With the general improvement of the patient, it was felt on March 1 that an effort should be made to determine the site of bleeding, and accordingly he was moved to the x-ray department. When he assumed the upright position, the patient again went into shock, and following this there was vomiting of a considerable amount of bright red blood. Further transfusions were instituted, and during the day he complained of severe pain in the region of the 11th and 12th ribs of the right side of such a degree that it was necessary to give hypodermic injections of morphine for relief. On March 1, after the bleeding episode, the blood count showed a hemoglobin level of 9.9 gm. per 100 cc. with 3,290,000 red blood cells per cubic millimeter. The patient continued, throughout the day, to have hematemesis of small amounts of what appeared to be old blood, but on the evening of March 1, because of an additional gastrointestinal hemorrhage of severe degree, the patient was seen by one of us (G. F. M.) in consultation. It was felt that surgical intervention was indicated, and accordingly the patient was prepared for surgery.

With the patient under general anesthesia the abdomen was opened through a midline incision, and exploration showed essentially normal findings except for the dark blood that appeared in the stomach, small intestine, and colon. There was a scar on the first portion of the anterior surface of the duodenum with considerable puckering. A gastrotomy was carried out, and there was no evidence of bleeding from the duodenum. All hemorrhage was occurring from the gastric side of the stomach opening. The ulcer on the anterior wall of the duodenum was well healed, and there was no evidence of active ulceration in the duodenum proper. The surgeon's index finger was passed into the epiploic foramen (foramen of Winslow), and on palpation a coarse thrill was felt, which continued throughout the cardiac cycle. The spleen was enlarged, and there were dilated vessels about the cardiac end of the stomach.

It was postulated that this patient was suffering from a hepatic artery portal vein fistula with secondary portal hypertension and that the bleeding was occurring from esophageal varices. The liver appeared normal in all respects. Compression of the hepatic artery in the hepatoduodenal ligament completely obliterated the thrill. An attempt to isolate the fistula appeared too hazardous because of the fibrosis in the hepatoduodenal ligament. The hepatic artery was then isolated proximal to the origin of the right gastric and gastroduodenal arteries and ligated; the ligation was done with heavy black silk. After this there was about 75% reduction in the thrill at the fistulous site. Next, the right gastric and gastroduodenal arteries were isolated and individually ligated, which further reduced the thrill by approximately 15%. It was not, however, until the right and left branches of the common hepatic artery were ligated that the thrill completely disappeared. All clots were then removed from the stomach; active bleeding had ceased. The gastrotomy opening was then closed. The patient returned to his room in fair condition. During surgery and the succeeding 12 hours he was given a total of 4,000 cc. of whole blood because of intermittent episodes of hematemesis.

On the next day, March 2, the patient vomited rather frequently small amounts of dark blood, but his condition seemed fairly good and he complained of hunger. Hemoglobin level on this date was 9.75 gm. per 100 cc. and the erythrocyte count was 3,420,000 per cubic millimeter. Although absorbable gelatin sponge (Gelfoam) and buffered thrombin had been given in an effort to control the bleeding, the patient continued to have infrequent bouts of hematemesis of small amounts of old blood. The Sengstaken tube was not then available for use as an aid in controlling the esophageal bleeding.

On March 3 the patient's condition was essentially unchanged. The hemoglobin determination was 12.75 gm. per 100 cc. with 4,260,000 erythrocytes per cubic millimeter. The hematocrit was 39%. He continued to have some dark blood in the vomitus, and at 11 p. m. on that date he again had a massive hemorrhage and went into shock. The blood pressure was 65/0 mm. Hg, and the pulse was hardly discernible. Additional blood was given, and the patient's condition remained critical throughout the 5th and 6th of March. At 2 a. m. on March 7, which was the sixth postoperative day, the patient had another massive hemorrhage and went into acute collapse and died. The patient received a total of 24 pt. (11.3 liters) of whole blood during his hospital stay.

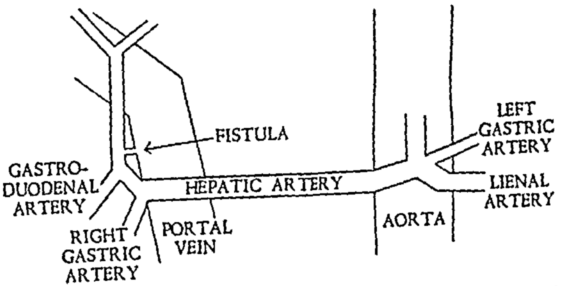


Fig. 2.—Diagram of fistula, showing the fistula tract connecting the hepatic artery with the portal vein.

Pathological Findings.—The postmortem findings in this case will be limited to the important pathological condition, i. e., the fistula that existed between the hepatic artery and the portal vein. Organs that showed no particular changes will not be mentioned. On examination of the abdominal cavity grossly, a considerable amount of blood could be seen through the intestinal wall, and this blood was found extending from the area of the esophagus all the way to the rectum. The stomach and esophagus were moderately dilated, and large esophageal varices could also be detected on the outside or serosal surface at the level of the gastroesophageal junction. Inspection of the pyloric end of the stomach and duodenum was next carried out. The hepatoduodenal ligament showed moderate induration that was secondary to an old duodenal ulcer on the anterior wall. There was also evidence of a gastrotomy near the pyloric end, which had healed nicely by primary intention.

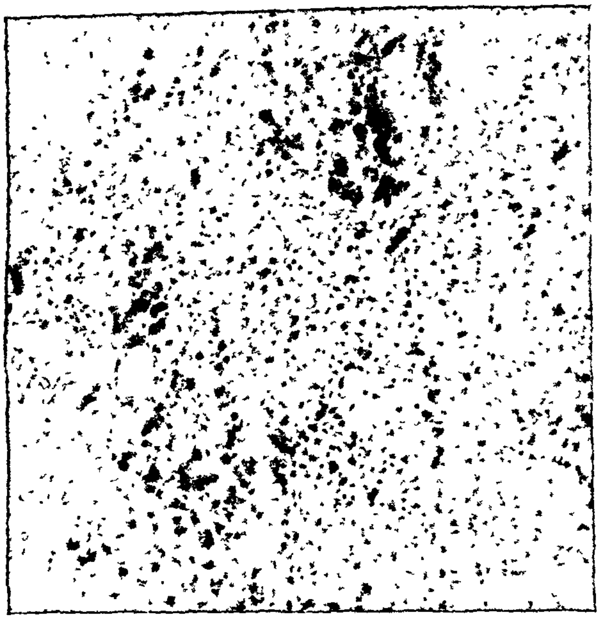


Fig 3.—Photomicrograph of liver showing the preservation of normal architecture after multiple ligatures of the hepatic artery had been made (hematoxylin and eosin stain, magnified 82 times).

The structures of the hepatoduodenal ligament were next isolated and examined (fig. 1). The hepatic artery had been ligated with silk as follows: one ligature was just proximal to the right gastric and gastroduodenal branches; a tie was found on both the right and left branches of the hepatic artery a slight distance beyond the bifurcation; and ligatures were present on the two branches of the hepatic artery, i. e., the right gastric artery and the gastroduodenal artery, a short distance from their take-off. The common bile duct was isolated, and no gross pathological condition was seen in this structure. The portal vein was next identified, and it was found to be just slightly more medial than usual at the level of the duodenum, but it curved to the right and entered the liver in its normal relations.

When the hepatic artery was opened, it had a diameter of 5 mm. throughout most of its extent. Separation of the intima was seen in that portion of the hepatic artery between the take-off of the gastroduodenal artery and the bifurcation just under the liver. Hemorrhage was found under the intima for a distance of about 1 cm. in the hepatic artery.

A fistula was now identified that connected the hepatic artery and the portal vein. It had its take-off about 0.5 cm. above (toward the liver) the origin of the gastroduodenal artery and extended a distance of 9 mm. through connective tissue and then entered the portal vein. The diameter of the fistula was 1.5 mm. A probe could be readily passed through this fistula from the hepatic artery to the portal vein (fig. 2).

The portal vein was now examined, and it appeared to be dilated even after postmortem collapse. Its diameter was 2.5 cm. The venous channels extending in the direction of the spleen and also in the direction of the lesser curvature of the stomach toward the esophagus were all dilated. The liver and gallbladder did not appear to be damaged in any way by the extensive ligation of the hepatic artery. The liver was not enlarged and had a weight of 1,700 gm. The lobes were symmetrical and conformed to the normal pattern of a liver. There was no gross evidence of necrosis.

The gastroesophageal junction showed wrinkling due in part to the underlying esophageal varices. Bleeding had occurred rather freely from these varices, and about 500 cc. of clotted blood was seen in the stomach itself. One bleeding point could still be identified post mortem when a small amount of adherent blood clot was seen over and attached to a break in a varix. The gastrointestinal tract contained the 500 cc. of clotted blood in the stomach, and darker blood was seen throughout the entire length of this tract. The duodenal ulcer had completely healed, and no other bleeding point was found in this system.

Microscopic Findings.—The liver did not suffer either grossly or microscopically because of its loss of blood supply through the hepatic artery (fig. 3). The liver cord cells had nuclei that stained well, and the cytoplasm did not show any remarkable changes. There was a small amount of bile pigment that was present in the bile canaliculi, but the amount was not more than could normally be expected. The portal spaces did not show any inflammatory changes. There was evidence of slight congestion in so far that a few sinuses were dilated.

The fistula trace had the microscopic characteristics of a small artery (fig. 4). All normal layers could be identified. The only pathological change was a slight degree of intimal proliferation, which was seen only in patches. The esophagus showed some loss of mucosa and numerous dilated veins in the submucosal area (fig. 5). One of these vessels was seen at a point of rupture with the vessel definitely opening into an ulcerated area of the esophagus. Microscopic examination of the other organs did not show any important changes.

COMMENT

The case that we are presenting has several facets that require some speculation in an effort to explain. It is our feeling that the arteriovenous fistula was congenital in origin, for there was no history of trauma of a penetrating nature. The patient had had a previous diagnosis of duodenal ulcer confirmed by roentgenograms, and considerable medical treatment had been given for the numerous episodes of reactivation of the ulcer. At the time of the surgical exploration there was no evidence of ulceration except for the scarring on the anterior wall of the duodenum. An ulcer in this location would not be prone to produce bleeding of the nature suffered by this patient. In addition, when the stomach was opened and the duodenum explored, there was no evidence of active ulceration or bleeding from the duodenum proper; all hemorrhage was coming from the proximal end of the

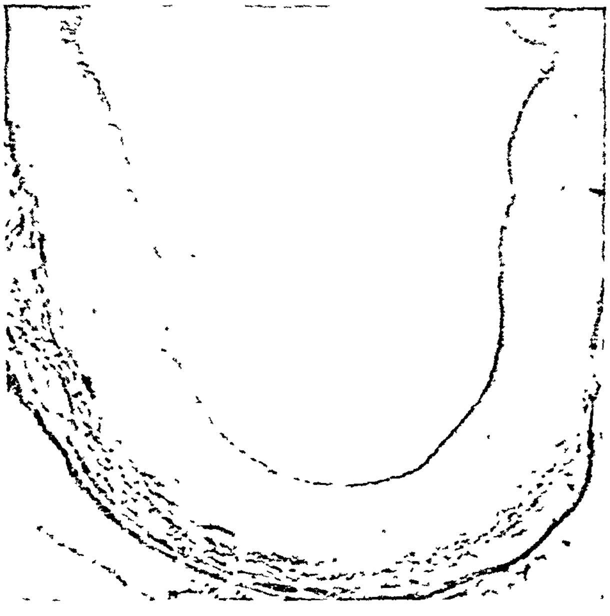


Fig 4.—Cross section of the fistula (hematoxylin and eosin stain, magnified 41 times). The microscopic characteristics are that of an arterial structure.

stomach. With the index finger in the epiploic foramen on palpation of the hepatoduodenal ligament, a continuous coarse thrill was felt throughout the entire cardiac cycle. This thrill was most intense in the center of the hepatoduodenal ligament and could be completely obliterated by compression of the hepatic artery at this level. Compression of the hepatic artery proximal to the right gastric artery did not eliminate the thrill, although it was reduced by approximately 75%. There was a further reduction of the thrill after ligation of the right gastric and gastroduodenal arteries, but it was not until both the right and left branches of the common hepatic artery had been ligated (in addition to the previously ligated common hepatic, right gastric, and gastroduodenal arteries) that the thrill completely disappeared. After tying of the ligature about the common hepatic artery proximal to the right gastric artery, a cardiac arrhythmia of the pulsus alternans type developed. It corrected itself, however, after one minute. There was no discernible decrease in the pulse rate after ligation of the hepatic artery.

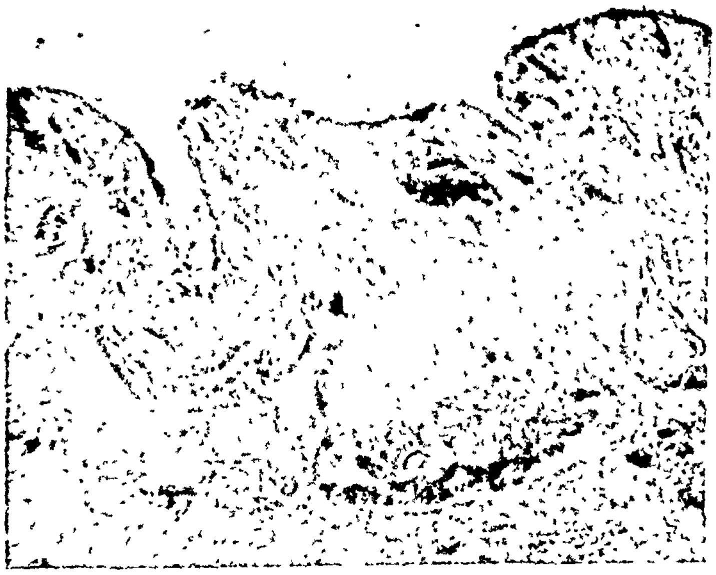


Fig 5—Photomicrograph of esophagus wall showing mucosal ulceration and exposed ruptured verix on left side (hematoxylin and eosin stain, magnified 41 times).

Except for the fistula there were no other evidences of congenital lesions in and about the liver and common duct. There were numerous dilated veins at the cardiac end of the stomach, and the spleen was about twice normal size. A devascularization of the upper part of the stomach with ligation of the coronary vein and splenic artery was considered at the time of surgery. It was felt, however, that since the passage of blood from the hepatic artery to the portal vein had been stopped there no longer existed a pressure elevation in the portal vein, and accordingly the esophageal bleeding would cease. In retrospect, we believe that the above procedure should have been carried out, although benefits following such procedures have been equivocal.

The patient was given intensive treatment with antibiotics (penicillin and streptomycin) postoperatively, and at autopsy there was no evidence of hepatic damage. This supports the contention of Markowitz, Rappaport, and Scott[4] and Rienhoff,[5] who feel that with adequate preparation with antibiotics patients will survive ligation of the common hepatic artery without development of liver necrosis.

Of interest is the experimental work of Shilling, McKee, and Wilt,[6] who developed a procedure in which the hepatic artery was anastomosed to the portal vein in dogs. They were able to find no significant elevation of venous pressure, mesentery congestion, or evidence of cardiac embarrassment in those animals followed 18 months. One animal presented some aneurysmal dilatation of the portal vein 17 months after the production of the arteriovenous fistula.

In the case we are reporting the development of collateral circulation apparently had occurred, for it was impossible to completely obliterate the thrill at the fistulous site until the branches of the common hepatic artery were completely ligated distal to the fistula, thus preventing retrograde flow into the fistula through these arteries. It is our feeling that the fistula was congenital in origin and took many years for production of the esophageal varices because of the small size of the fistulous opening. Although there was evidence of dilatation of the portal vein with congestive splenomegaly and varices, we feel that the process did not progress more rapidly because of the amount of inflammatory reaction and fibrosis in the tissues around the fistula. This obviated a rapid dilatation of the structures through which the short-circuited blood was flowing. It is also our feeling that the absence of cardiac dilatation and failure were the result of the nondistensibility of the vessels making up the arteriovenous fistula. The fibrosis and lack of distensibility of the tissues in the hepatoduodenal ligament was secondary to the inflammatory reaction, which had occurred in the hepatoduodenal ligament secondary to the recurrent activation of the duodenal ulcer that the patient had had for many years. In addition, the wall of the fistulous tract was arterial in structure; because of its thickness, it obviated more rapid dilatation of this tract.

SUMMARY

In the second case of hepatic artery portal vein fistula recorded in the literature, portal hypertension resulting from the fistula was manifested by portal vein enlargement, congestive splenomegaly, and esophageal varices. Complete ligation of the hepatic artery, including its branches, was carried out without the development of hepatic necrosis. We feel that, had devascularization of the upper two-thirds of the stomach with ligation of the coronary vein and possibly the splenic artery been carried out, the bleeding from the esophageal varices might have been arrested.

36 S. El Camino Real (Dr. Madding).

---

3. Miller, G. F., and Owen, A. P.: Treatment of Bleeding Esophageal Varices, J. A. M. A. **152:** 377 (May 30) 1953.

4. Markowitz, J.; Rappaport, A., and Scott, A. C.: Prevention of Liver Necrosis Following Ligation of Hepatic Artery, Proc. Soc. Exper Biol. & Med. **70:** 305 (Feb.) 1949.

5. Rienhoff, W. F., Jr., and Woods, A. C.: Ligation of Hepatic and Splenic Arteries in Treatment of Cirrhosis with Ascites, J. A. M. A. **152:** 687 (June 20) 1953.

6. Schilling, J.; McKee, F., and Wilt, W. Experimental Hepatic-Portal Arteriovenous Fistulae, read before the American College of Surgeons, Chicago, Oct. 17-21, 1949.

A CASE OF HYPERPARATHYROIDISM WITH SEVERE NEPHROCALCINOSIS

SOME INTERESTING INDUSTRIAL MEDICAL IMPLICATIONS

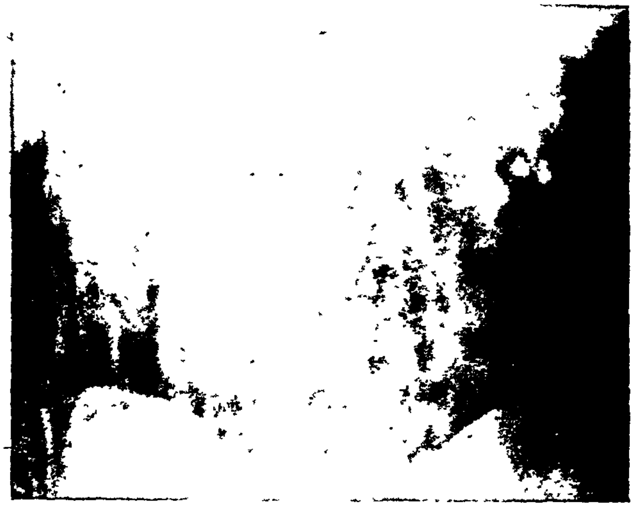
Gerald J. Friedman, M.D.
Monroe E. Greenberger, M.D.
and
Harold Brandaleone, M.D., New York

The clinical findings in hyperparathyroidism may be due to involvement of the urinary tract, skeletal system, or hematopoietic system or to hypercalcemia. Most patients with primary hyperparathyroidism show some evidence of kidney disease. The case being presented is of interest because of the severity of the renal involvement; in addition, the industrial medical implications are of such importance as to warrant reporting.

REPORT OF A CASE

A 36-year-old man was asymptomatic until March 7, 1952, when he stepped on a stone while getting out of his car and sustained a minor injury to his left ankle. On the following day, while at work, he caught his left heel on a bus step and twisted his left ankle. Within two hours after the accident the pain and swelling became severe, and he was unable to continue working. Examination by his physician revealed swelling over both malleoli of the left ankle with pain and limitation of motion of the ankle joint. There was point tenderness over the medial malleolus. Roentgen examination showed a small avulsion fracture of the tip of the medial malleolus in good position. The patient remained under the care of his private physician, who immobilized the ankle in a plaster cast with a walking heel. The cast was removed on April 19, 1952, and an Unna's paste boot was applied. On May 16, 1952, he sustained another twist injury of the left foot, and roentgen examination revealed marked osteoporosis of the bones of the foot. On May 22, 1952, the orthopedic consultant to the company employing the patient noted, "It is difficult to understand why, in the face of adequate motion, absence of swelling, practically no tenderness and only a chip fracture, he still presents a moderate degree of disability after two and a half months." The patient gradually recovered and returned to work on June 1, 1952. A urine examination done in our clinic on April 28, 1952, revealed albuminuria, hematuria, and pyuria (see table). Urinalysis was repeated on May 9, 1952, with similar findings. The patient was, therefore, referred for a complete genitourinary study. Roentgenograms revealed severe nephrocalcinosis with involvement of both kidneys (see figure). Because of the possibility of hyperparathyroidism, the patient was referred for further investigation. This was interrupted, however, when he sustained another injury to his left ankle and knee while surf-bathing on July 29, 1952. Orthopedic and roentgen examination disclosed only the old, small avulsion fracture of the left ankle. The left knee was slightly swollen, with quadriceps atrophy above it. Motion of the knee was unrestricted. There was some tenderness over the medial ligaments. A diagnosis of internal derangement of the left knee was made. The patient made a slow recovery and returned to work on Sept. 7, 1952.

On Sept. 9, 1952, investigation of the nephrocalcinosis was begun. A review of our records revealed the finding of albuminuria, hematuria, and hyaline casts on a routine examination in October, 19[illegible]. There was no history of glomerulonephritis. A vague history of "renal stone" in 1948 with a recurrence in 1949 was obtained. There were no other episodes of colic. The only other significant finding in the history was a fracture of the right elbow with uneventful recovery in 1931. When seen on Sept. 9, 1952, the patient was asymptomatic except for the complaint of stiffness of the left knee. Examination revealed a well-developed, well-nourished white man who did not appear acutely or chronically ill. He had no dyspnea, orthopnea, or cyanosis. He walked with a slight limp. Other physical findings were: skin: no nodules or pigmentation; pupils: normal; fundi: the discs were clear, there were no hemorrhages, exudates, or arteriovenous nicking, and there was a slight thinning of the arteries; ears, nose, and throat: normal; neck: mild cervical adenopathy; lungs: clear; heart: point of maximal impulse not felt, sounds forceful, second aortic sound louder than second pulmonic sound, no thrills or murmurs, regular sinus rhythm, ventricular and pulse rates 88 per minute, and blood pressure 140/100 mm. Hg on the right and 130/98 mm. Hg on the left; abdomen: no tenderness, masses, rigidity, or rebound, and the liver and spleen were not felt; and extremities: both knees normal, no instability of the joints, no effusion, 1 in. (2.54 cm.) atrophy of left calf, ½ in. (1.27 cm.) atrophy of left thigh, and no pain on weight-bearing. Fluoroscopy showed a normal heart and lungs, with calcifications in the hilar regions. A flat plate of the abdomen and an intravenous pyelogram both revealed bilateral nephrocalcinosis. Laboratory data are listed in the table. Examination on Oct. 27, 1952, revealed absence of symptoms referable to the knee or ankle. The only abnormal physical finding was the atrophy of the left calf. The importance of further study for hyperparathyroidism was stressed repeatedly, and on Feb. 24, 1953, the patient was admitted to the New York Hospital by his family physician. At this time he was completely asymptomatic, without colic, fever, frequency, passage of stones, or gross hematuria. Physical examination was reported as revealing no abnormalities. Blood pressure was 140/100 mm. Hg. For laboratory data in this examination, see the table. Roentgen examination showed a minimal amount of demineralization of the skull and the bones of the hands, consistent with a diagnosis of hyperparathyroidism. A roentgenogram of the chest was within normal limits. An intravenous pyelogram revealed extensive nephrocalcinosis bilaterally with promptly functioning kidneys. An esophagogram was normal.



Flat plate of the abdomen of the patient in case reported on, showing bilateral nephrocalcinosis

A diagnosis of hyperparathyroidism due to an adenoma of the parathyroid was made on the basis of the nephrocalcinosis, a persistently elevated serum calcium level, and a depressed phosphorus level. On March 5, 1953, the neck and superior portion of the mediastinum were explored, but no parathyroid tumor was found. The patient was discharged on March 12, 1953, and readmitted on April 2, 1953, for mediastinal exploration. There was no change in the patient's condition with regard to his genitourinary and musculoskeletal systems. Examination on this admission revealed a blood pressure of 130/85 mm. Hg. The physical examination was normal except for a healed collar incision of the neck. The laboratory data are shown in the table. On April 2, 1953, an ectopic parathyroid tumor was removed from the anterior mediastinum with the patient under general anesthesia. The pathological report on

---

Dr. William A. Barnes and the staff of the New York Hospital made available records used in this study.

the specimen was adenoma of the parathyroid gland. The patient received five blood transfusions. A roentgenogram made postoperatively revealed a bilateral pneumothorax and pneumomediastinum. By the night of the first postoperative day, the Sulkowitch test for calcium had become normal. Injections of 10 cc. of 10% solution of calcium gluconate intravenously and 25 units of parathyroid hormone subcutaneously were given. The patient was given a high-calcium, low-phosphorus diet, 2 gm. of calcium gluconate four times a day, and 8 cc. of 4% aluminum hydroxide preparation (Amphojel) three times a day. Twice daily, 400,000 units of procaine penicillin and 0.5 gm. of dihydrostreptomycin were given intramuscularly. The Chvostek and Trousseau signs of tetany were not elicited. On the second postoperative day, the patient's temperature was 101.3 F. Serosanguinous fluid drained from the wound. The serum calcium level was 9.4 mg. per 100 cc.; the phosphorus level, 2.6 mg. per 100 cc.; and the Sulkowitch test showed calciuria. The patient had a febrile course, with a peak temperature of 105.3 F on the fourth postoperative day despite administration of aqueous penicillin (200,000 units every six hours), oxytetracycline (Terramycin), and dihydrostreptomycin. Antibiotic sensitivity studies of cultures of the exudate from the chest showed the organism to be resistant to penicillin, streptomycin, and aureomycin; moderately sensitive to bacitracin and erythromycin; and slightly sensitive to chloramphenicol (Chloromycetin). A profuse, purulent drainage from the sinus tract developed on the sixth postoperative day. It was treated by daily irrigations of the mediastinum with saline solution. In view of the sensitivity studies, treatment with 500 mg. of erythromycin every six hours and local instillation of bacitracin solution into the sinus tract was started on the eighth postoperative day. All other antibiotic therapy was discontinued.

On the ninth postoperative day, with the patient under local anesthesia, an incision was made in the second and third interspace in order to drain the anterior mediastinum. The cavity was found to the right of and behind the sternum, in "stomach shape." Through and through catheters were placed in the wound. On the 10th postoperative day the temperature was normal, and by the 12th postoperative day the irrigations were noted to be cleaner. A roentgenogram of the chest showed a decrease in the anterior mediastinal and pleural abscesses and an increase in the reaction of the lungs and pleura. At about this time, the patient had transient episodes of relative irrationality. The serum calcium level was 8.4 mg. per 100 cc.; phosphorus, 5.3 mg. per 100 cc. Calciferol (Vitamin D_2) administration in a daily dose of 400,000 units was started. The saline irrigations, bacitracin instillations, and oral administration of erythromycin were continued, and on the 14th postoperative day (six days after the initiation of the bacitracin and erythromycin therapy and four days after the incision and drainage of the abscess cavity) the patient was afebrile for the entire day. He remained afebrile throughout the remainder of his hospitalization. The erythromycin therapy was discontinued on the 18th postoperative day, but the bacitracin irrigations were continued until the 25th postoperative day. Therapy with calcium and calciferol was discontinued in an effort to avoid further calcinosis. The patient was discharged from the hospital on April 28, 1953.

Laboratory Data in Examinations of Patient with Hyperparathyroidism

Test	10/31/39	1/28/52	5/9/52	9/9/52	2/4/53	4/2/53	PARATHYROID ADENOMA REMOVED	4/4/53	4/14/53	4/20/53	12/1/53
Urine											
Specific gravity	1.012	1.008	1.008	1.011	....	....		....	....	....	1.010
Protein	trace	2+	+	trace	faint trace	....		....	....	....	faint trace
Glucose	normal	normal	normal	normal	....	....		....	....	....	....
White blood cells	moderate	clumps	60-80 per high power field	many	many	....		....	....	....	30-35 per high power field
Red blood cells	occasional	many	10-15 per high power field	many	rare	....		....	....	....	7-8 per high power field
Casts	occasional	none	....	....	....	....		....	....	....	....
Sulkowitch test	....	....	....	....	normal	....		positive	normal	positive	normal
Serum											
Calcium, mg. per 100 cc.	....	....	....	10.2	13	12.3		9.4	8.4	10.1	9.5
Phosphorus, mg. per 100 cc.	....	....	....	2.5	1.9	2.3		2.6	5.3	4.9	2.9
Alkaline phosphatase, Bodansky units per 100 cc.	....	....	....	7.8	....	6.7		....	....	....	1.5
Albumin, gm. per 100 cc.	....	....	....	5.4	4.7	....		....	....	....	4.2
Globulin, gm. per 100 cc.	....	....	....	1.2	3	....		....	....	....	2.2
Nonprotein nitrogen, mg. per 100 cc.	....	....	....	33	....	....		....	....	....	....
Urea, nitrogen, mg. per 100 cc.	....	....	....	....	....	9		....	....	....	....
Creatinine, mg. per 100 cc.	....	....	....	1.9	....	....		....	....	....	....
Citric acid, mg. per 100 cc.	....	....	....	....	....	....		....	....	1.2-1.5	....
Mazzini test	....	....	....	....	....	normal		....	....	....	....
Red blood cells, millions per cu. mm.	....	....	....	5	5.4	....		....	....	....	4.9
Hemoglobin, gm. per 100 cc.	....	....	....	15.5	15.5	13.5		....	....	....	15.5
White blood cells per cu. mm.	....	....	....	7,250	6,700	10,000		....	....	....	5,000
Polymorphonuclears, %	....	....	....	60	....	....		....	....	....	69
Lymphocytes, %	....	....	....	39	....	....		....	....	....	26
Staffs, %	....	....	....	1	....	....		....	....	....	3
Monocytes, %	....	....	....	0	....	....		....	....	....	2
Eosinophils, %	....	....	....	0	....	....		....	....	....	0

Examination in the medical department of the company employing the patient in November, 1953 (seven months after the operation), revealed no change in the physical findings. The patient was clinically well. He had been working regularly since July 8, 1953. The laboratory data at this time are shown in the table. Roentgenograms made Nov. 19, 1953, revealed no change in the chest, bone, or kidney findings.

COMMENT

Nephrocalcinosis may be found in a variety of diseases: hyperparathyroidism,[1] multiple myeloma,[2] sarcoidosis,[3] renal acidosis,[4] vitamin D intoxication,[5] osteitis deformans,[6] osteolytic bone metastases,[6] osteoporosis

---

1. Albright, F.; Baird, P. C.; Cope, O., and Bloomberg, E.: Studies on Physiology of Parathyroid Glands: IV. Renal Complications of Hyperparathyroidism, Am. J. M. Sc. **187**: 49, 1934.
2. Cosgrove, K. E., and La Tourette, K. S.: Multiple Myeloma Simulating Hyperparathyroidism, Am. J. Med. **15**: 862, 1953.
3. Klatskin, G., and Gordon, M.: Renal Complications of Sarcoidosis, Am. J. Med. **15**: 484, 1953.
4. Latner, A. L., and Burnard, E. D: Idiopathic Hyperchloraemic Renal Acidosis of Infants (Nephrocalcinosis Infantum): Observations on Site and Nature of Lesion, Quart J. Med. **19**: 285, 1950.
5. Howard, J. E., and Meyer, R. J.: Intoxication with Vitamin D, J. Clin. Invest. **8**: 895, 1948.
6. Albright, F., and Reifenstein, E. C.: The Parathyroid Glands and Metabolic Bone Disease: Selected Studies, Baltimore, Williams & Wilkins Company, 1948.

of disuse,[7] and others.[8] The diagnosis of hyperparathyroidism must always be suspected when nephrocalcinosis or urolithiasis is found.[9] The confirmation of the diagnosis depends on the finding of a high serum calcium level with a low serum phosphorus level. Albright feels that in a marked degree of the disease these values will be sufficiently abnormal that other diagnostic procedures are superfluous. The serum phosphatase level is an indication of the presence of bone disease but should not be used in determining whether a patient has hyperparathyroidism.

Our patient presented little difficulty in diagnosis. When surgery of the neck failed to reveal an adenoma of the parathyroid, a mediastinal exploration was essential. Ectopic parathyroid adenomas in the mediastinum have been reported in 18% of the cases of hyperparathyroidism from the Massachusetts General Hospital.[10] Postoperatively, tetany did not develop. Albright and Reifenstein [6] have shown that this complication usually occurs when there is marked bone disease and a high serum phosphatase level, since the cause is not hypoparathyroidism but osteomalacia. As a precautionary measure, the patient was given calcium gluconate intravenously and a high-calcium, low-phosphorus diet. At the time of writing the patient is clinically well. He is asymptomatic and has normal blood levels of calcium and phosphorus; however, the renal calcinosis has not decreased, in spite of the normal laboratory findings and the disappearance of the hypercalciuria. Thus the eventual prognosis must be guarded. Rienhoff [11] reported that 9 of 25 patients from whom parathyroid tumors had been removed were dead after postoperative periods of 3 to 11 years. All deaths were due to hypertension with or without renal insufficiency. Prognosis was best in those with the least renal damage. This emphasizes the importance of early diagnosis of parathyroidism. It is in this sphere that the industrial physician can be of great help.

The primary responsibility of the industrial physician is the maintenance of the health of the employee. The importance of complete preplacement and periodic medical examinations lies in the early detection, with resultant correction, of defects, thus permitting persons to pursue their occupations with maximal efficiency for the longest possible duration. This case of nephrocalcinosis demonstrates the importance and value of comprehensive medical study in employees with compensation accidents. Careful medical investigation brought to light a systemic disease far more serious than the presenting fracture. The removal of the parathyroid adenoma and the resultant correction of the physiological abnormality could not have been accomplished if attention had been focused on the injury alone. There is no doubt that the hyperparathyroidism antedated the patient's original ankle fracture. Since the bone involvement in hyperparathyroidism is generalized, the potentiality for other pathological fractures was great. Labor and management must be educated as to the value of thorough medical care. Employees fear the loss of their jobs if evaluation reveals the presence of a serious disease, yet the discovery of correctable defects will lead to improvement in the employee's health and earning capacity. Even if the disease is not correctable, the sick employee may have years of gainful employment through proper job placement. The discovery of preexisting systemic disease may result in the saving of large sums of money by preventing subsequent unjustifiable compensation claims.

SUMMARY

The finding of hyperparathyroidism with bone disease and kidney involvement, due to a parathyroid adenoma, in a claimant for accident compensation illustrates the importance of comprehensive medical evaluation of all patients with compensation claims. This study resulted in the discovery and treatment of a severe, systemic, medical disease that was the major contributing factor to the patient's compensation injury.

850 Park Ave. (21) (Dr. Friedman).

[7] Albright, F.; Burnett, C. H.; Cope, O., and Parson, W.: Acute Atrophy of Bone (Osteoporosis) Simulating Hyperparathyroidism, J. Clin. Endocrinol. **1**: 711, 1941.

[8] Burnett, C. H.; Commons, R. R.; Albright, F., and Howard, J. E.: A Syndrome Characterized by Hypercalcemia, Calcinosis, and Renal Insufficiency Following Prolonged Intake of Calcium and Alkali, J. Clin. Endocrinol. **8**: 584, 1948.

[9] Beard, D. E., and Goodyear, W. E.: Hyperparathyroidism and Urolithiasis, J. Urol. **64**: 638, 1950.

[10] Cope, O.: Surgery of Hyperparathyroidism: Occurrence of Parathyroids in Anterior Mediastinum and Division of Operation into Two Stages, Ann. Surg. **114**: 706, 1941.

[11] Rienhoff, W. F., Jr.: Surgical Treatment of Hyperparathyroidism, with a Report of 27 Cases, Ann. Surg. **131**: 917, 1950.

PARAPLEGIA FOLLOWING TRANSLUMBAR AORTOGRAPHY

Saul Boyarsky, M.D., Durham, N. C.

Translumbar aortography has become known in the past decade as a procedure that is safe and valuable in outlining the renal vascular pattern.[1] Since the substitution of the concentrated organic iodides for sodium iodide [2] no further deaths or serious sequelae have been reported; large series have been reported without accidents, confirming the pioneer work of Dos Santos,[3] Doss. and Nelson. As a new method gains wide use, complications and accidents not previously encountered will inevitably occur. These untoward reactions should be reported to warn others and to aid in the final evaluation of the total risk of the method. This is a report of the development of paraplegia below the level of the eighth thoracic cord segment after translumbar aortography, with partial recovery.

REPORT OF A CASE

A 63-year-old married laborer was admitted to the medical service on Sept. 14, 1953, with the complaint of crampy pain of five years' duration in the lower part of the abdomen. The history and review of symptoms were noncontributory. Physical examination revealed normal temperature, pulse, and respiration and a blood pressure of 145/75 mm. Hg. The patient was emaciated but cooperative and not acutely ill. There was evi-

---

From the Division of Urology, Department of Surgery, Duke University School of Medicine (Resident in Urology, Duke Hospital) and the Department of Surgery, Veterans Administration Hospital.

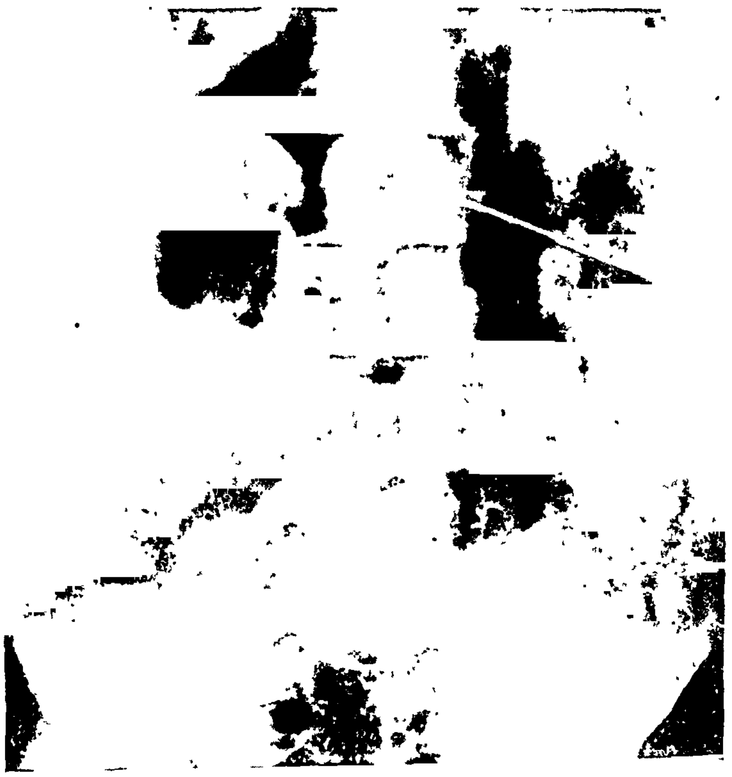
[1] (*a*) Deterling, R. A., Jr.: Direct and Retrograde Aortography, Surgery **31**: 88-114 (Jan.) 1952. (*b*) Leriche, R.; Beaconsfield, P., and Boely, C.: Aortography: Its Interpretation and Value: Report of 200 Cases, Surg., Gynec. & Obst. **94**: 83-90 (Jan.) 1952.

[2] Wagner, F. B., Jr., and Price, A. H.: Fatality After Abdominal Arteriography: Prevention by New Modification of Technique, Surgery **27**: 621-626 (April) 1950. Footnote 1.

[3] Dos Santos, R.; Lamas, A. C., and Caldas, J. P.: Artériographie des membres et de l'aorte abdominale, Paris, Masson et Cie, 1931.

dence of peripheral and retinal arteriosclerosis, but there were no obliterative changes in the extremities. The abdomen was soft, scaphoid, and nontender. In the left lower quadrant a rounded, pulsating mass about 5 cm. in diameter was palpable. A soft bruit was heard in the epigastrium. The extremities showed no trophic changes; pulsations were symmetrical and normal. The remainder of the examination, including neurological examination, was normal. The diagnosis on admission was generalized and cerebral arteriosclerosis with abdominal aortic aneurysm. On admission, leukocyte and differential counts, hemoglobin level, sedimentation rate, urinalysis, stool examination, serologic test for syphilis, nonprotein nitrogen level, fasting blood sugar level, and a roentgenogram of the chest were normal. A plain film of the abdomen showed two ring-like opacities over the right upper quadrant that were interpreted as gallstones. Findings from a gastrointestinal series and barium enema were normal, except for a few small diverticula throughout the entire colon. Anteroposterior and lateral views of the lumbosacral spine showed slight narrowing of the fifth lumbar interspace with arthritic reaction.

On Sept. 21, 1953, an aortogram was made with the patient under thiopental (Pentothal) sodium anesthesia. The standard technique for aortography [4] was followed. Only after six or eight attempts was the aorta punctured. There was no escape of gas or spinal fluid and no radical change in the direction of the needle in any of the punctures. A trial injection of 5 cc. of 70% sodium acetrizoate (Urokon Sodium) showed bilateral, uneven outlining of the renal vessels. A final injection of 10 cc. was made. The anesthesia had been uneventful, with no hypoxia, laryngospasm, or other difficulty. The aortogram showed uneven filling of the renal vessels with puncture at the level of the second lumbar vertebra (see figure). There was no evidence of extravasation of the medium. The aorta was not well filled close to the point of insertion of the needle but was outlined lower down, where it deviated slightly to the left of the midline. The right iliac artery was well filled, but the left was not. Urograms made immediately after this showed no excretion of the medium on the right and poor excretion on the left.



Aortogram of patient in case reported on, done on Sept. 21, 1953, and followed by paraplegia with partial recovery.

Fourteen hours later, after he had recovered fully from the anesthesia, the patient was unable to move his legs. Examination showed a normal mental status with flaccid paralysis of the lower extremities, a completely flaccid abdomen, complete urinary retention, and complete sensory anesthesia below the eighth thoracic dermatome. Urine obtained by catheterization showed a pH of 7.5, specific gravity of 1.012, and a 2+ proteinuria. Microscopic examination showed 18 to 25 red blood cells per high-power field. Repeated roentgenograms of the thoracic and lumbar vertebrae showed no change from the previous films. Lumbar puncture showed normal pressure and dynamics and grossly clear spinal fluid; microscopic examination showed no cells; the spinal fluid protein level was 228 mg. per 100 cc.; and a spinal fluid Wassermann test was normal. Two days later recovery from the sensory defect was almost complete. Slight motion had become apparent in the hips and toes, but no reflexes, clonus, or Babinski sign could be elicited. On the third day after the aortogram was made evidence of pneumonia or pulmonary infarction developed: sudden, severe pleuritic pain at the right costal margin and fine rales at the base of the right lung. The temperature was 101 F. A roentgenogram of the chest showed infiltrative changes at the base of the right lung. The patient was treated with penicillin, streptomycin, and anticoagulants. On the fifth day after the aortogram was made he had a sudden episode of severe cramping pain at the right costal margin, with pallor, perspiration, blood pressure of 90/60 mm. Hg, and considerable tenderness in the right upper quadrant of the abdomen. His temperature was 101.9 F, leukocyte count 10,025 per cubic millimeter, and hemoglobin level, 11 gm. per 100 cc. Two days later his temperature was normal and all discomfort had disappeared. There was no further crisis. A subsequent roentgenogram of the chest showed slight changes suggestive of an old infarct of the right lung. For the next month and a half the patient showed steady improvement. He was supervised in active and passive exercises of the legs by the physical therapist. He regained ability to void without residual urine but still showed a bacillary infection of the urinary tract. He refused a second lumbar puncture.

On discharge, Nov. 10, 1953, he was walking a few halting steps unassisted and could walk with the aid of crutches. He could stand on a wide base but had moderate atrophy and weakness of all the muscles of the legs. Neurological examination showed intact sensation of the lower extremities except for two small patches of anesthesia, over the sole of the right foot and just below the left inguinal ligament. Position and vibratory sense and heel-to-shin tests were normal. Reflexes were normal except for an equivocal Babinski sign on the right. There was no clonus. The discharge diagnoses were aneurysm of the abdominal aorta, probable; thrombosis of the anterior spinal artery at the eighth thoracic segment; paraplegia, secondary to the thrombosis, with improvement; pulmonary embolism, right lower lobe; and bacillary infection of the urinary tract. On reexamination two months after discharge the patient was ambulatory with the aid of crutches, but he had a partial spastic paresis of both lower extremities. He had no residual urine, occasional hesitancy, and no constipation.

COMMENT

A spinal fracture having been ruled out, the episode that followed aortography was considered to be best explained by sudden ischemia of the cord or direct toxic action of the opaque medium along the vascular bed of an anterior artery that simulated ischemia. The following possibilities were entertained in the differential diagnosis of the cause of this patient's paraplegia: (1) chemical trauma to the cord or to its vessels by diversion of the opaque medium into a spinal branch of the aorta; (2) mechanical trauma to the spinal cord or its vessels by the needle puncture; (3) exacerbation of a preexisting disease, resulting in arterial embolism or hemorrhage into a previously silent cord tumor; or (4) contamination of the opaque medium.

Chemical trauma to the cord or its vessels seems likely. Transient vascular spasm has occurred after the use of the organic iodides,[1] although no permanent thromboses such as have followed the use of sodium iodide have been reported. The sensitivity of central nervous tissue to sodium acetrizoate, iodopyracet (Diodrast), and sodium iodomethamate (Neo-Iopax) has been well established.[5] In the case reported here an excessive amount of the contrast medium may have been diverted into the spinal cord circulation, owing to position of the needle near the mouth of the arteria radicularis magna. The theory of mechanical trauma to the cord or its vessels by the needle is supported by little evidence. There was no flow of spinal fluid from the needle, nor was the sensation of penetrating the dura experienced. The spinal fluid showed no leukocytes, erythrocytes, or xanthochromia after aortography. The level of neurological deficit did not correspond with the level of aortic puncture. Exacerbation of a previously unsuspected pathological condition by the procedure was considered as a diagnostic possibility. Thromboembolic disease was considered unlikely unless one assumed a retrograde path for the embolus to travel and a coincidence between aortography and the dislodgment of a thrombus. Dislodgment of an arteriosclerotic plaque in the aorta has not been reported as a complication of aortography. Hemorrhage into a previously unsuspected cord tumor was not likely in view of the patient's progressive recovery, although he refused a second lumbar puncture to make certain that the previously elevated spinal fluid protein level had returned to normal. Contamination of the sodium acetrizoate was ruled out to the satisfaction of all concerned. Decomposition of the medium during normal storage with formation of toxic products has not been reported.

---

[4] Smith, P. G.; Rush, T. W., and Evans, A. T.: Technique of Translumbar Arteriography, J. A. M. A. 148: 255-258 (Jan. 26) 1952.

Review of Literature.—Reports of serious reactions following aortography have been few. Up to the present, only two deaths [6] and one case of paraplegia [7] have been reported. The deaths followed injection of sodium iodide into the superior mesenteric artery with thrombosis and resultant gangrene. Evans [8] has heard of a case of paraplegia and a case of hemiplegia following aortography that were attributed to mechanical trauma to the spinal cord. Sequelae of aortography, briefly, are (1) injection or diversion of the injection into the superior mesenteric or celiac arteries, the renal arteries, or the arteries of the central nervous system, resulting in toxicity due to excessive local concentration; (2) sensitivity to the contrast medium; (3) mechanical puncture of the aorta with possible hemorrhage; (4) mechanical puncture of an adjacent viscus, the pleura, or the cord; and (5) extravasation of the medium in the aortic wall or outside of the aorta.

With the substitution of sodium acetrizoate, iodopyracet, and sodium iodomethamate for sodium iodide and the use of a preliminary injection, excessive local concentration of the opaque medium has not been followed by more than transient vascular spasm, localized pain, or transient impairment of renal function.[9] Dos Santos,[10] Smith,[4] Sante,[6] and others caution against needle puncture of the aorta between the levels of the 12th thoracic and the 2nd lumbar vertebrae, lest this result in injection of the important visceral branches of the aorta, such as the renal and mesenteric vessels. The central nervous system has been involved in sequelae such as convulsions and hemiplegias after arteriography.[11] Any circulatory abnormality or anomaly that shunts a large amount of contrast medium into brain or spinal cord circulation may result in serious reaction and, possibly, permanent neurological deficit.[12] Antoni and Lindgren's [7] patient died three months after the onset of gangrene of a leg that followed aortography with 70% iodopyracet. He was a 68-year-old man with arteriosclerosis and peripheral vascular occlusion. Paraplegia was attributed to ischemia of the spinal cord secondary to aortic compression. Autopsy three months later showed necrosis of the cord but no thrombosis of the lumbar arteries or aorta. Analysis of their report in the light of my experience suggests that the necrosis of the cord could have been caused or compounded by specific toxic action of the contrast medium on the cord. The needle point was at the level of the second lumbar vertebra, as in the case reported here. A disproportionate amount of contrast medium could have entered the arteria radicularis magna and caused a transverse myelitis by direct action on the cord.

Sensitivity to contrast mediums is a recognized problem but does not occur often with the use of sodium iodomethamate or sodium acetrizoate.[13] Preliminary sensitivity-testing by several methods [14] or even preliminary intravenous urography can be done.[4] Trauma due to needle puncture [15] apparently has little ill effect on the aorta. Dos Santos discusses a puncture of the spinal cord itself as being inconsequential in several instances. However, Evans [8] has heard of instances of neurological defect following aortography that were attributed to mechanical damage to the cord. Extravasation of dye into the wall of the aorta or in the periaortic tissues has been followed by little permanent effect when the organic iodides have been used.[1]

CONCLUSIONS

There are several possible explanations for the development of paraplegia after aortography in this case. None can be established without doubt, but this should not divert attention from the fact that it did occur, and, whatever the mechanism, it was a serious reaction. Two lessons should be drawn from this. One is that improvement in technique for aortography must be carried on unceasingly. Dos Santos' and Smith's admonition to avoid injection below the level of the 12th thoracic vertebra should be reemphasized. The second lesson is that aortography is not without some risk, even when done cautiously. It should not be done unless the information to be gained will influence the diagnosis, prognosis, or therapy enough to justify this risk. With increased experience the contraindications to aortography will become more widely recognized. At present, Leriche[1b] recognizes these as (1) impending gangrene, (2) allergy to the medium, (3) general cachexia, and (4) poor renal function. I would like to add a fifth: insufficient information to be gained from the procedure. I do not wish to be misunderstood as denying the value of the method in selected cases. I merely cite my experience, unusual as it may be, to aid each physician to judge whether aortography is indicated for his individual patient.

---

[5] Bloor, B. M.; Wrenn, F. R, Jr., and Margolis, G.: Experimental Evaluation of Certain Contrast Media Used for Cerebral Angiography. Electroencephalographic and Histopathological Correlations, J. Neurosurg. 8: 585-594 (Nov.) 1951.

[6] Sante, L. R: Evaluation of Aortography in Abdominal Diagnosis, Radiology 56: 183-192 (Feb.) 1951. Footnote 1.

[7] Antoni, N., and Lindgren, E: Steno's Experiment in Man as Complication in Lumbar Aortography, Acta chir. scandinav. 98: 230-247, 1949.

[8] Evans, A. T.: Personal communication to the author.

[9] (*a*) Lindgren, E: Technique of Abdominal Aortography, Acta radiol 39: 205-218 (Mar.) 1953. (*b*) Larrson, H, and Palmlöv, A: Abdominal Aortography with Special Reference to Its Complications, ibid 38: 111-124 (Aug) 1952. (*c*) Footnote 2.

[10] Dos Santos, R.: Technique de l'aortographie, J internat. *chir* 2: 608-634, 1937.

[11] Footnote 1. Smith and others[4] Lindgren.[9a]

[12] Woodhall, B: Personal communication to the author.

[13] Pendergrass, E. P.; Chamberlin, G. W.; Godfrey, E W, *and Burdick*, E. D.: Survey of Deaths and Unfavorable *Sequelae Following* Administration of Contrast Media, Am. J. Roentgenol. 48: 741-762 (Dec) 1942.

[14] Alyea, E. P., and Haines, C. E: *Intradermal Test for Sensitivity* to Iodopyracet Injection, or "Diodrast," *J A M A* 135: 25-27 (Sept. 6) 1947.

[15] Footnote 1. Dos Santos and *others*.[2] *Smith, and* [illegible] and Palmlöv.[9]

SUMMARY

Complete motor and sensory paralysis below the level of the eighth thoracic segment occurred in a patient after aortography with 70% sodium acetrizoate (Urokon) for demonstration of a possible aortic aneurysm. The patient regained sensory, bladder, and partial motor function. The probable cause of paralysis was thrombosis of the anterior spinal artery or direct toxic action of the sodium acetrizoate on the spinal cord. This case is reported as a warning that aortography is not entirely without danger and should not be done without indication enough to justify the risk involved.

CHARCOT JOINT IN DIABETES MELLITUS

Earl H. Antes, M.D., Evansville, Ind.

Neuropathy with Charcot joint manifestations is only infrequently seen as a complication of diabetes mellitus. In 1936, Jordan[1] reported a case of poorly controlled diabetes with typical findings of a Charcot joint. Bailey and Root,[2] in 1947, described 17 cases in which there was painless destruction of the tarsus. Rundles,[3] Foster and Bassett,[4] Lister and Maudsley,[5] Beidleman and Duncan,[6] Sheppe,[7] and others have contributed case reports that help to clarify the course of this unusual disease. The following case report may throw further light on the understanding of diabetic neuropathy with joint involvement.

REPORT OF A CASE

A 39-year-old man was first seen on Feb. 7, 1951, complaining of soreness of the left foot for two years. Ten years before, during a routine Army examination, he was told he had diabetes. He subsequently refused any type of therapy for his diabetes. Two years before his admission a tack had stuck in his left foot, which had remained infected for a long period of time. He was told at the time that there was much sugar in his urine. Blisters appeared around the tips of the toes of his left foot; these would come and go. One week before his admission the end of his left great toe became black and there was generalized reddening and swelling of the foot. He gave a history of absence of sweating of his feet for a number of years. Leg cramps had been noticed on exertion for at least five years. There had been no diabetic management, although at first increased amounts of urine and increased appetite had been present.

History.—The patient had been obese for a long period of time, with a maximum weight of 234 lb. (106.1 kg.). He had had no serious illnesses or operations. At the age of 26 he suffered a stab wound of the chest, which healed uneventfully. The patient was married and had had no children. He gave no history of hypertension, diabetes, or syphilis.

Physical Examination.—The patient was an obese, florid-complexioned man who weighed 200 lb. (90.7 kg.). There was marked dental caries and poor oral hygiene. Funduscopic examination showed a minimal amount of macular degeneration. There was no lymphadenopathy, and the thyroid gland was not palpable. The heart was not enlarged. The rhythm was regular, and no murmurs were present. The heart rate was 80 beats per minute. The blood pressure was 135/80 mm. Hg. The lungs were normal. The sharp liver edge was felt 3 cm. below the right costal margin. The spleen was not palpable. The genitalia were normal, and the prostate was of normal size. The tip of the left great toe was gangrenous, and there was a blister on the tip of the third toe of the same foot. There was evidence of blisters on several other toes. There was considerable reddening and edema of the left great toe and adjacent parts of the foot. All peripheral pulses were present on both feet. There was no sweating of the feet. Neurological examination showed the absence of ankle and knee jerks in both legs; no pathological reflexes were present. Sensory examination showed hypesthesia and hypalgesia of both feet and ankles. There was loss of vibratory sensation on the shins.

Laboratory.—The admission fasting blood sugar level was 180 mg. per 100 cc. Urinalysis showed normal results except for the presence of sugar (4+). Studies of the blood showed 4,730,000 red blood cells, 5,000 white blood cells per cubic millimeter, and 14 gm. of hemoglobin per 100 cc. A blood Mazzini test was negative. Roentgenograms of the right foot and ankle showed no abnormalities.

Clinical Course.—The diabetes was readily controlled. The patient was discharged in eight days on a diabetic diet with 45 units of protamine zinc insulin every morning. The gangrenous lesions on his toes healed rapidly.

On July 19, 1951, redness and swelling of the right leg that included the foot and the calf developed. At this time the diabetes was out of control. There was no gangrenous involvement of the toes. The edema was markedly pitting in nature and subsided readily on elevation of the legs. The dorsum of the right foot was reddened, but there was no increased local heat or evidence of ulceration.

During the following eight months the patient was seen at infrequent intervals and had a persistent, painless swelling of the right foot and ankle. He was readmitted to the hospital on March 11, 1952, after chills and fever and a severe cough developed. The diabetes was out of control. At this time the dorsum of the right foot showed marked swelling and reddish discoloration with moderate tenderness. The swelling and tenderness subsided rapidly on elevation of the leg. The foot was everted, and there was marked pes planus. On April 1, after further recurrence of the edema, x-ray studies were made of the right foot and ankle (see figure, *A*).

Roentgenograms of the right foot showed a generalized osteoporosis of the bones. The joint spaces involving the base of the first, second, and third metatarsals appeared obliterated. There was a large radiolucent area in the base of the second metatarsal, and there appeared to be a pathological fracture at this site. There was also some fragmentation of the base of the first metatarsal laterally. There was irregular periosteal reaction of the second metatarsal and an exostosis near its distal end. The base of the third metatarsal was poorly defined, and its joint spaces were obliterated. The distal row of tarsal bones was also involved, particularly the first and second cuneiform bones. Soft tissue swelling of the foot was noted.

---

[1] Jordan, W. R.: Neuritic Manifestations in Diabetes Mellitus, Arch. Int. Med. **57**: 307-366 (Feb.) 1936.

[2] Bailey, C. C., and Root, H. F.: Neuropathic Foot Lesions in Diabetes Mellitus, New England J. Med. **236**: 397-401, 1947.

[3] Rundles, R. W.: Diabetic Neuropathy: General Review with Report of 125 Cases, Medicine **24**: 111-160, 1945.

[4] Foster, D. B., and Bassett, R. C.: Neurogenic Arthropathy (Charcot Joint) Associated with Diabetic Neuropathy: Report of Two Cases, Arch. Neurol. & Psychiat. **57**: 173-185 (May) 1947.

[5] Lister, J., and Maudsley, R. H.: Charcot Joints in Diabetic Neuropathy, Lancet **2**: 1110-1113, 1951.

[6] Beidleman, B., and Duncan, G. G.: Charcot Joints and Infectious-Vascular Lesions of Bones in Diabetes Mellitus, Am. J. Med. **12**: 43-52, 1952.

[7] Sheppe, W. M.: Neuropathic (Charcot) Joints Occurring in Diabetes Mellitus, Ann. Int. Med. **39**: 625-629, 1953.

The evidence of bone changes now present was compatible with the diagnosis of Charcot foot. The blood pressure was 135/80 mm. Hg. There was no evidence of gangrene of the extremities. There was absence of pain sensation on the feet. A lumbar puncture showed no cells. The total protein was 172 mg. per 100 cc., the gold curve was 0012100000, and the spinal fluid Kahn test was negative.

During the following five months a walking cast was worn that satisfactorily allowed the patient to be on his feet and prevented marked dependent edema from forming. Roentgenograms taken on Sept. 18, 1952, showed the destructive process to be less pronounced than on previous observation. There appeared to be callus being thrown out at the site of fracture of the second metatarsal bone.

The patient discarded his walking cast in January, 1953, and he has required no type of support since this time He is working six days a week and is on his feet 12 hours each day. He has noted no symptoms except for occasional mild swelling of his foot and ankle. Physical examination in May, 1954, showed no edema of the foot and ankle, although very marked pes planus was present. There were no skin lesions, and the peripheral pulses were present. The blood pressure was 135/85 mm. Hg. The blood sugar level two hours after a meal was 160 mg. per 100 cc. The urine showed 30 mg. per 100 cc. of albumin and a few red blood cells.

The roentgenograms taken at this time showed that considerable calcium deposits had been thrown out at the various places noted in previous observations, in areas where there was definite bone destruction. There appeared to be some bone absorption at the third metatarsal-phalangeal joint space, although calcium was being thrown out at this level also (see figure, *B*). The patient is being maintained under fair control with 80 units of protamine zinc insulin every morning. He still has difficulty in adhering to his diet.

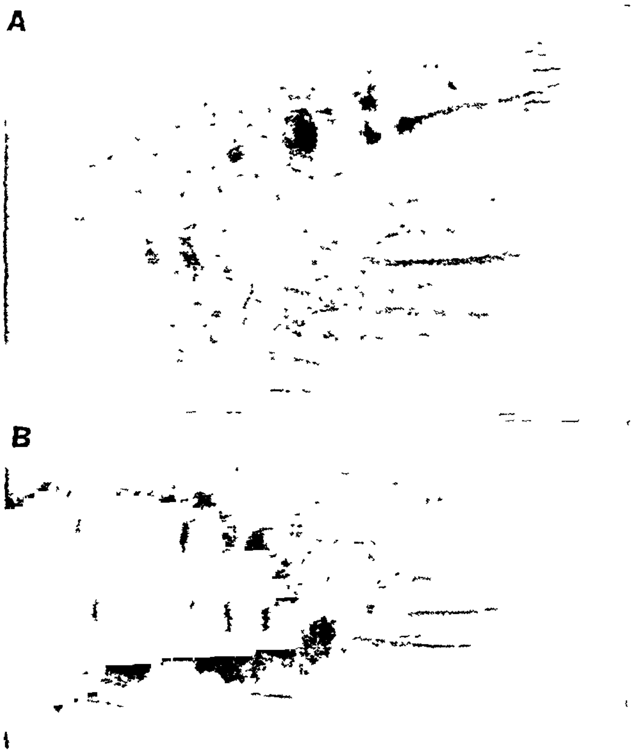
COMMENT

In Bailey and Root's description of Charcot feet, the condition was characterized by absence of pain and rapid development of osteolytic bone lesions. Jordon,[1] Foster,[4] and others mentioned that callus formation may occur. Parsons and Norton,[9] in 1951, reported two cases in which lumbar sympathectomy apparently arrested the bony process and, in one case, there was considerable healing of the pathological process. Sheppe,[7] in 1953, reported one case in which sympathectomy had no effect on the lysis and absorption of bone. A walking cast was used for the present patient, and definite x-ray evidences of healing were noted. This immobilization procedure also prevented the edema from becoming extensive and cumbersome.

Marble[10] stated, in 1948, that the use of orthopedic appliances in an effort to relieve weight-bearing, thereby helping to prevent further deformity, is the only treatment that has proved helpful in Charcot joints due to diabetes mellitus. Martin[11] suggests that all patients with diabetic neuropathy should have the feet studied by x-ray routinely. He also advises rigid control of the diabetes. He feels that with adequate treatment of the diabetes recovery may be expected in the neuropathy in approximately 60% of the patients within six months to two years, unless the neuropathy has been of long standing. With recovery of the nerve disorder the progress of the bone changes appears to be halted.

No evidence of infection was associated with the joint involvement in the illustrated case. However, at times there was marked redness of the dorsum of the foot when the edema was maximal. This observation suggests that infection is not the primary etiological factor in the formation of Charcot joint in diabetes. This is in accord with the studies of Bailey and Root.[2]

No gross vascular disturbances were noted. The extremities were warm and the pulses full. There were marked evidences of nervous system damage. This was manifested by areflexia in the lower extremities and sensory loss, particularly to pain. There was no evidence that the Charcot joints were caused by other diseases, such as syringomyelia and syphilis.



Anteroposterior roentgenograms of right foot of patient in case reported on. *A*, April 1, 1952, generalized osteoporosis is seen. *B*, May 17, 1954, calcium deposits have been thrown out in the areas in which the bone destruction had been present.

SUMMARY

Rapid destruction of the tarsus, metarsals, and proximal phalanges occurred in a patient with a long-standing, poorly controlled case of diabetes. No significant infection or vascular changes were seen, even though there were marked evidences of neuropathy, including absent reflexes and marked sensory disturbances. Definite improvement was noted after diabetic control and immobilization procedures were carried out.

420 Cherry St.

---

8 Deleted in proof.

9. Parsons, H., and Norton, W. S: The Management of Diabetic Neuropathic Joints, New England J. Med. 244: 935-938, 1[illegible]

10. Marble, A Diabetic Neuropathy, J. Kansas M. [illegible] 22, 1948

11. Martin, M M.: Charcot Joints in Diabetes [illegible] Soc Med. 45: 503-506, 1952.

NEW PORTABLE ANESTHETIC GAS MACHINE AND RESUSCITATOR

PRELIMINARY REPORT

Robert A. Hingson, M.D., Cleveland

During the past six months a portable, light-weight gas machine has been developed for use in the induction of anesthesia, the conduct of short anesthesias, and various resuscitative maneuvers. The idea for the development of such a small machine presented itself while a small oxygen inhalator was being developed for use in the treatment of hangovers following acute alcoholism. This machine (fig. 1) has been used in the operating rooms of University Hospitals of Cleveland since March, 1954. Its total weight is 17 oz. (482 gm.). It can be held in the palm of one hand and is capable of inducing anesthesia with and without premedication in children and adults. It consists of the following parts: (1) a conductive rubber face mask; (2) a central axial body of spark-proof aluminum with a compression spring valve that may be opened and closed with slight pressure, which opens the ports within the mask by sliding movement, permitting the exchange of respiratory gases within the unit; (3) a conductive rebreathing bag (at present 3 liters); (4) two right-arm aluminum containers to house the gas-filled cylinders; (5) gas cylinders; and (6) a soda lime canister. The aluminum containers attach with proximal threads to the small central axial body, which has a specially designed perforating and sealing sliding mechanism for perforating the oxygen and anesthetic cylinders. One of these side-arm containers has an orange band of color to identify the anesthetic port, and the other side-arm container has a green band of color to designate the oxygen port. In order to prevent the inadvertent fitting of two reservoirs of anesthetic gases into the machine simultaneously to the exclusion of oxygen, a safety device has been incorporated that is a reversal of the pin index system now used in standard anesthetic machines. A small metal knob is incorporated on the distal end of all reservoirs containing anesthetic gases; it is of such a size that it protrudes through a specially adapted port in the container on the anesthetic side of the machine. This makes impossible the use of a tank reservoir containing an anesthetic on the oxygen side-arm, because the knob prevents the apposition of the projecting thorn perforator to the metal cap of the anesthetic reservoirs. Thus, with this safety device it is possible to use two oxygen reservoirs in resuscitative maneuvers but only one anesthetic and one oxygen reservoir in any anesthesia induction. The cylinders for use in this machine, tested for 4000 psi (pounds per square inch) burst pressure, contain oxygen or anesthetic gas under pressure. Thus far, the following gases have been packaged in the reservoirs: oxygen, cyclopropane, cyclopropane plus nitrogen, and nitrous oxide. The seals on these cylinders are perforated by the specially designed mechanism described above after they are in position in the side-arm container. This maneuver is carried out by attaching the side-arm container to the central axial body with a rotary movement, by means of a thread. The cylinder seals covering the compressed gases are cracked slowly in sequence by the perforating mechanisms, which permit the gases slowly to fill the rebreathing bag. The directional baffle of the central axial body shunts the gas flow into the bag. Slight counterpressure opens the ports from the rebreathing bag to the mask and the patient. A transparent, conductive soda lime or Baralyme canister covered by a fine mesh conductive screen at both ends (fig. 2) has been developed that can be used within the central axial body for long procedures or eliminated for short induction procedures and anesthetics requiring less than two minutes of rebreathing. Reservoir or wall oxygen fulfilling the patient-minute-volume requirements may be added through a distal nipple port on the rebreathing bag. From 400 to 600 cc. of oxygen per minute is usually delivered to the adult patient. Since the oxygen cylinders are self-containing within the machine, it is possible for this machine to be used in short procedures without resorting to a large reservoir supply of oxygen. The alternative port, however, is included in the machine as an operating cost-saving mechanism.

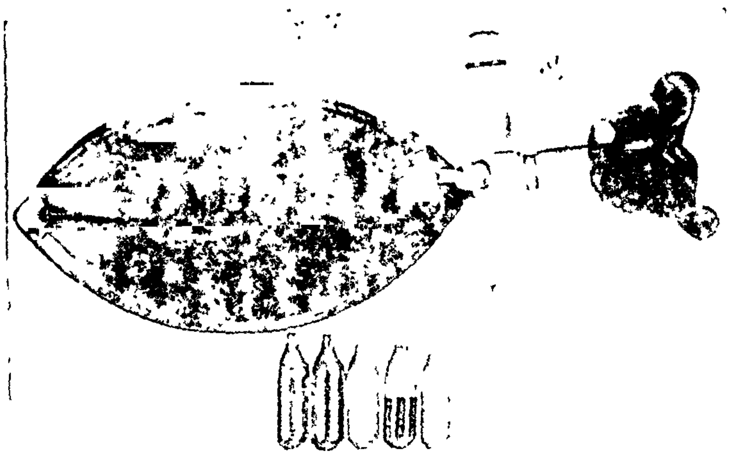


Fig. 1.—Portable machine for administration of anesthetics and oxygen, with gas cylinders.

The amount of cyclopropane in the standard cylinder, 1630.3 cc., weighs 3,000 mg. Since 16 mg. of cyclopropane per 100 cc. of blood, or 960 mg. of cyclopropane in the 6,000 cc. total blood volume of the average adult, is required to produce stage 3, plane 2 anesthesia, the total quantity of 3,000 mg. stored in each cylinder is adequate to achieve anesthesia through primary blood stream saturation.

The standard colors have been used as recommended by the Bureau of Mine Safety, Department of the Interior, and the American Society of Anesthesiologists. The exteriors of the thumb-sized gas cylinders have been painted as follows: oxygen, green; nitrous oxide, blue; helium, brown; cyclopropane, orange; and cyclopropane and nitrogen, orange and black.

EXPERIMENTAL RESULTS

Contrary to the results anticipated from experience with cyclopropane in the past, in which inductions with 50:50 cyclopropane-oxygen mixtures with standard,

---

From the Division of Anesthesia, Department of Surgery, School of Medicine, Western Reserve University and University Hospitals of Cleveland.

The machine described in this report was developed in collaboration with Mr. Frank Ziherl and Mr. Arthur Kish, engineers of the Z. & W. Machine Products Company, Cleveland.

large anesthesia machines required one to four minutes for third stage, first or second plane surgical anesthesia, it was found that volunteers could be anesthetized with this machine to this same depth of anesthesia with 4 to 10 respirations. These results were obtained in 15 volunteers and subsequently confirmed by several inductions carried out in dogs in the experimental laboratory. The machine was first used in March, 1954, for inducing surgical anesthesia in a precipitating multipara. Induction was obtained with three breaths. The second patient for whom the machine was used was promptly anesthetized, without incident, for the evacuation of the uterus by curettement for a miscarriage complicated by severe hemorrhage. This patient required six breaths of the 50:50 mixture, which produced anesthesia for four minutes. The obstetrician decided to effect another curettement for further examination: the same mask was placed back on the patient's face for three more breaths, producing surgical anesthesia for nine minutes. The third patient was one requiring a dilatation and curettage. She required 12 breaths of the 33% cyclopropane-oxygen mixture for the eight minute procedure. In May, 1954, the use of this machine was begun in pediatric otolaryngological surgery by Dr. Hamilton Davis and Dr. C. C. Roe Jackson. At the time of writing 255 inductions for this purpose have been effected without complication. This experience will be reported separately. An additional 56 inductions were performed with this machine for all types of pediatric surgery in children from 3 weeks to 14 years of age, with only one case of vomiting or changing to ether and one incident of transient laryngospasm. In dental extractions for 24 children the machine provided anesthesia of two to five minutes' duration without complications with 10 to 14 breaths of the 50:50 cyclopropane-oxygen mixture. It has become the anesthesia method of choice at this hospital for the setting of simple fractures, myringotomies, and incision and drainage of abscesses.

TABLE 1.—*Total Volume of Free Gas Stored in the Cylinders Under Standard Conditions*

	Free Volume	
Gas	Cc.	Cu. In.
Oxygen	1639.3	100
Cyclopropane	1630.3	100
Cyclopropane plus nitrogen:		
Cyclopropane	814.6	59
Nitrogen	100	7
Nitrous oxide	4917.9	300

TABLE 2.—*Percentage Mixtures of Gases Released into the Rebreathing Bag with Various Combinations of Cylinders*

Mixture		
Gases	%	Cylinders Used, Code Colors
Oxygen	50	Green
Cyclopropane	50	Orange
Oxygen	60	Green
Cyclopropane	30	Orange and black
Nitrogen	10	
* Oxygen	25	Green
Nitrous oxide	75	Blue

* With 6 liter bag.

From 4 to 15 breaths of the 50:50 mixture will induce anesthesia. For maintenance this is followed by either the drop ether sequence or vinyl ether (Vinethene) intermediary plus the drop ether sequence. The use of this machine has considerably shortened the induction time and has eliminated a great many of the fearful psychological reactions that children experience with the use of the open drop mask. In adult general surgery this device has been used for inducing anesthesia in 20 additional patients. There were delirium and marked excitement stages in two of these patients with a 33% by volume cyclopropane mixture, and in another patient with a 50% by volume cyclopropane mixture. The latter patient, however, had a poorly fitting mask. There was one instance of emergence delirium requiring restraints in another of these patients. For short, 5-to-10-minute operations, this machine has been used with cyclopropane and wall oxygen for anesthesia. In resuscitation, by adding an Oxford type, corrugated bellows rebreathing bag, the instrument becomes a ventilator simpler than and almost as effective as the Kreiselman resuscitator. In addition, it has the advantage of providing portable oxygen for field and emergency hospital use.

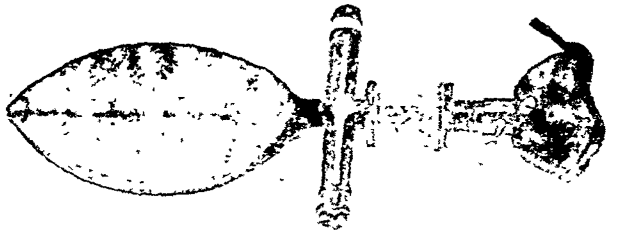


Fig. 2.—Soda lime canister inserted between central body and rebreathing bag of the anesthetic machine.

ENVISIONED USES

Following are some of the possible uses of this machine in modern clinical anesthesia, resuscitation, and oxygen inhalation therapy.

Short Anesthesias.—The machine may be used in short, 5-to-20-minute anesthesias when quick return to consciousness is desirable, such as dental anesthesia for simple extractions. In the United States, more than 80% of the 85 million dental anesthesias conducted each year are carried out with local block anesthetics. It would be desirable for many of them to be conducted with short-acting, general anesthetics if portable and maneuverable apparatus such as this could be widely used. It is thought that a large percentage of the 200,000 American dentists would find a beneficial use for such a device. In hospital emergency rooms, this device becomes an auxiliary gas machine for use in reduction of dislocations and for quick induction of anesthesia to assist in the control of sudden and severe hemorrhage. It is also useful for precipitate delivery anesthesias in obstetrics; at least 10% of the nation's obstetric deliveries fall in this category and occur so rapidly that present-day techniques and apparatus cannot be utilized, a situation sometimes to the disadvantage of mother and/or baby. It is believed that such a device would find a wide usage in every obstetric hospital, being far superior to the trichloroethylene (Trilene) apparatus now being used. In pediatric anesthesia it may serve as an induction apparatus preliminary to open drop administration of anesthetics, thereby removing the emotional hazard of the larger and more frightful machines.

Therapy.—The machine may be utilized as a portable ventilation apparatus, with oxygen, for rebreathing carbon dioxide in hiccups, atelectasis, and postanesthesia hypoventilation (16 successful applications have been made in this field); for use by cardiac patients in the office and home, as an easily maneuverable device that is much superior to present ones and much more economical; and for use by passengers of planes at high altitudes, hooked to a central manifold valve to a common source of oxygen supply, and by paratroopers during descent through hypoxic atmospheres. With the development of analgesic individual doses incapable of providing anesthesia, the machine could be utilized in the home by patients with intractable spasmodic pain attacks from cancer and the neuritides as a substitute for and a replacement of injectible opiates and synthetic analgesics.

Resuscitation.—Such devices are usable as mechanical resuscitators for use on the battlefield and in industry by first aid corpsmen and physicians; by firemen and policemen in suffocation accidents from fire or suicidal inhalation; and by first aid rescue squads in drowning accidents and mine explosions. Adult volunteers have been comfortable rebreathing 100% oxygen for six minutes from two cylinders of oxygen with an initial volume of 3,200 cc. Analysis reveals that the oxygen concentration remains above 40% for this period.

OTHER ADVANTAGES

The cost of such a small device would be many times less than that of the present gas machines, which, even in portable models, cost from $500 to $1,500. The machine is safe to use; it reduces the explosion potential 240 times, purely on the basis of the numerical reduction of explosive molecules. It is calculated that an explosion within this device (even though more unlikely than with the present standard machines) would not be capable of inflicting serious damage on personnel or apparatus exclusive of the patient. Further, it uses calculated sublethal doses of gas, of which there could be no augmentation by mechanical defect or human error such as is now possible with standard machines. However, second and sequential individual dose cylinders could be added for prolonged and augmented anesthesia. The machine with the small portable tanks could be stored on battleships or near ammunition or other explosives, which is not possible with present-day equipment. The portability of the device permits many applications; for example, in forward positions on the battlefield, in mine explosions, and in minor blast disasters, a portable device such as this could be dropped from aircraft without a parachute without damage to the apparatus. The smallest portable apparatus now in existence that will perform this service with anesthetic tanks attached weighs more than 40 lb. (18 kg.), and the usual anesthetic gas machine weighs between 100 and 200 lb. (45 to 91 kg.), whereas this apparatus, including the cylinders of gas, weighs less than 2 lb. (0.9 kg.). Adaptations for use at night or during blackouts can be developed. It would be possible to construct the exterior in such a manner that dangerous radiation from atomic dust would be screened from the patient. The instrument could be used as an auxiliary respirator by firemen and rescue workers in salvaging suffocating patients from environments of carbon monoxide, smoke, sewer gas, cooking gas, and other poisonous gases. Both the rescue worker and the victim could be protected with a machine for each person. The machine in its present form is an effective gas mask permitting persons to breathe a controlled mixture for 20 minutes to one hour during evacuation from dangerous areas of smoke, poison gas, or incendiary explosives.

SUMMARY AND CONCLUSIONS

A new, small anesthetic gas machine and resuscitator, now being developed at Western Reserve University and University Hospitals of Cleveland, has been used in the management of 386 patients without major complications. In the category of resuscitation and rescue with 100% oxygen, this compact unit presents no danger and a great many safety factors. However, the category of anesthesia is a very different problem. The dangers inherent in the administration of every anesthetic are present here also. The additional hazards of explosion, while reduced from those with standard machines using larger volumes of explosive gases and able to produce longer anesthesia, are apparent. The principles of good and conservative medicine, anesthesiology, and pneumatology must be followed in further uses of this flexible and interesting apparatus.

The Meaning of Illness.—The general practitioner should allow himself to practice generally and not make a specialty of general practice. As one specializes more and more, one adds blinders, narrowing one's observational field and, like the horse, protects oneself from the threatening events which lie outside. . . . I have had an unusual opportunity in large teaching hospitals to identify myself with each of the practicing medical specialties. This experience has tempered greatly the urge: to cure, to change, to take away, to cut out, to medicate symptoms. . . . I have observed that clinical medicine is organ-system oriented, or technically-mechanically oriented. . . . Inherent in the traditional connotation of the meaning of disease is the idea that one is attacked, afflicted or overpowered by outside, alien forces such as bacteria, and that an organ system is actively deranged. All of the biological sciences and their clinical ancillary, medicine, shared this tradition for generations. . . . Now not so many of the diseases are related to the action of alien, or pathogenic agencies. . . . Illnesses now seem to arise from within the organism itself and seem to represent some struggle in self-expression or some anomaly of our given biological substratum. . . . Why is it so difficult for us to accept it as a discovery? Possibly because we are comfortable in our tradition. A tradition is like a cloister, protective and comfortable. We inherit this tradition from such men as Virchow, . . . or Pasteur. . . . It is an historical paradox that the great accomplishments of the past often become an obstacle to further development. There is always an inertia between the discovery of a new scientific truth and its acceptance into scientific work. As human scientists, we categorize our observations according to the scientific philosophy to which we were exposed in our training. We need constantly to revise this trend. Our observations are our greatest teachers.—H. Sadler, M.D. The Necessity of Illness, *Journal of the Michigan State Medical Society*, June, 1954.

COUNCIL ON PHARMACY AND CHEMISTRY

REPORT TO THE COUNCIL

The Council has authorized publication of the following report from the Committee on Pesticides.

R. T. STORMONT, M.D., *Secretary.*

Over two years ago, a Committee report, "The Health Hazards of Electric Vaporizing Devices for Insecticides" (J. A. M. A. **149:***367 [May 24] 1952), described the dangers of continuously dispersing chlorophenothane (DDT) or lindane into the atmosphere of occupied spaces. The facts presented were sufficiently impressive to prompt a number of states and municipalities to adopt measures to control the sale, installation, and use of vaporizing devices.*

A supplementary report entitled "Health Problems of Vaporizing and Fumigating Devices for Insecticides" (J. A. M. A. **152:***1232 [July 25] 1953) offered further evidence of the hazards of continuously operating insecticide vapor dispensers and critically examined those devices employing a new procedure, namely the intermittent dispensing of higher concentrations of volatilized insecticide at intervals of every other week. Since the latter procedure involved the rapid volatilization of poison into closed, unoccupied rooms and certain other precautions not unlike those required in fumigation with more familiar chemicals such as cyanide, methyl bromide, and sulfur fumes, it has been referred to as a form of fumigation. Accordingly, specialized vaporizing devices for this type of application have been called insecticide fumigators. The limitations of insecticide fumigators as well as the promotional techniques employed to sell them were revealed in the aforementioned supplementary statement.*

Consumer complaints, correspondence with physicians, and a sampling of advertising mediums indicate that many firms marketing these devices continue to make advertising claims that not only violate the facts but also invite dangerous misuse of the poisons involved. Since the tendency to foster misuse of fumigators and to make untrue claims for their safety appears to be increasing, the present report is necessary.

BERNARD E. CONLEY, *Secretary,*
Committee on Pesticides.

ABUSE OF INSECTICIDE FUMIGATING DEVICES

The experience of the last several years in the use of devices to volatilize insecticides into the atmosphere of homes and commercial establishments has provided proof of the dangers of excessive exposure to the vapors and fumes of lindane. The problem of what factors are responsible for excessive exposure has not been fully determined. Overliberal use, inadequate ventilation, poorly constructed equipment, and a peculiar sensitivity of those so injured have been cited as causative factors. Accumulating clinical evidence suggests that initial findings on the toxicity of this compound in experimental animals are not always directly convertible to human beings.

Single doses of lindane given orally to experimental animals have been reported to be moderately toxic, whereas inhalation of vapors and fumes is highly toxic. It has been commercially exploited as a comparatively safe insecticide because of minimal storage in fat tissues and fairly prompt elimination from the animal body when ingested in trace amounts. Recently, however, it has been discovered that lindane is stored in significant amounts in the brain and functioning liver tissue of certain species of laboratory animals and that in relatively high doses it may induce profound and long-lasting effects on the central nervous system.

The accident record with lindane is no less suggestive. Since the chemicals used in fumigating devices are frequently available as pellets (tablets) or packaged as white crystals, they are liable to accidental misuse. Ingestion of about 0.5 gm. of lindane in pellet form produced convulsions in an 18-month-old child. Four children were also seriously poisoned after drinking unspecified quantities of a homemade soft drink sweetened with lindane-contaminated sugar. The case histories follow:

> A nationally advertised "Electrically Controlled Bug Killer" was purchased as the result of an advertisement in a recent Sunday issue of a western newspaper. The device and lindane pellets were ordered by telephone and received by mail from a local distributor. The carton containing the vaporizing device and the lindane pellets were then spread on the dining room table. One of the packages of pellets was soon missed, and the mother found her 18-month-old daughter on the floor with it. The child apparently had ingested one and one-half pellets. She was rushed to a nearby first aid station where her stomach was washed. The child began to convulse, was taken by ambulance to a local hospital and given oxygen immediately. Within an hour she became completely spastic. Phenobarbital was administered, and she again began vomiting, which lasted about one hour. Seven and one-half hours after admission her condition was improved, but she was kept under observation for residual liver and kidney effects. Although the interval between ingestion of the tablets and the onset of symptoms (vomiting, convulsions) is unknown, less than 90 minutes elapsed between ingestion and admission to the hospital. The exact weight of the pellets is not recorded, but similar tablets for like devices weigh 0.33 gm. Since 18-month-old girls weigh 22.5 lb. (10.24 kg.) on the average, it may reasonably be assumed that the child ingested about 48 mg. of lindane per kilogram of body weight. Prompt absorption of the poison appears to have occurred, since vomiting and gastric lavage were of limited help in removal of the ingested poison.
>
> Three of four children who drank a homemade soft drink were seized by vomiting and convulsions in less than 6 hours; a fourth child, a boy age 7, was affected 12 hours later. No specific treatment was given, and no further toxic effects were noted. The amount of soft drink consumed and the concentration of lindane present in the drink are not known. Subsequent investigation of the accident elicited the following facts. A sample supply of lindane packed in unlabeled small cellophane bags had been removed from an insecticide plant by an employee and given to the mother of three of the children who were injured. These bags were inadvertently placed in a sugar container. On the day of the poisoning the mother emptied the bags into the sugar container thinking them to be sugar. The soft drink was sweetened with the powdered lindane that was mistakenly mixed with the sugar.

Although laboratory and clinical evidence of toxic potentialities of lindane have been widely disseminated, certain promoters of insecticide vaporizers and fumigators continue to represent their appliances as absolutely safe, recognized for the control of disease-bearing insects, and useful any place where an insect problem exists. In spite of representations and actions by the Federal Trade Commission, the National Better Business Bureau, and the Post Office Department, these promoters are using newspaper advertisements, mail order outlets, and direct solicitations to inveigle purchasers with misleading claims. The following case history is taken from recent correspondence received by the Committee on Pesticides:

> A housewife, having purchased a vaporizer in a plain cardboard container devoid of advertising, wrote to the firm about the safety of the device for home use. A representative of the firm later called at the woman's home, returned her letter, and stated that, although he intended to write, he thought he would call in person since he happened to be in the area. After describing his product in glowing terms, the representative claimed that it was absolutely safe, effective against 200 kinds of insects, and would hurt nothing that breathes. On questioning, he further advised that accidental ingestion by a small child of the lindane tablets used in the machine would produce no more discomfort than possibly a slight nausea.

It is difficult to imagine that promoters of insecticide vaporizers and fumigators are so callous as to knowingly disregard the dangerous implications of their suggestive advertising. Such actions can only be rationalized on the basis of ignorance of the toxicities of the chemicals used. Neither ignorance nor misplaced confidence is justification for questionable promotional tactics.

Insecticidal poisons that are effective because of deliberate continuous pollution of the atmosphere have questionable safety. Their use in this manner is contrary to hygienic standards for safe atmospheric living and working conditions. The Committee wishes not only to reaffirm its opposition to the home use of continuously operating devices (insecticide vaporizers) but also to reemphasize its warning that extreme care is required in the intermittent use of such equipment promoted as so-called insecticide fumigators.

THE JOURNAL
OF THE AMERICAN MEDICAL ASSOCIATION
535 N. DEARBORN ST. . . . . CHICAGO 10, ILL.
Editor . . . . AUSTIN SMITH, M.D.
Associate Editor . . . . JOHNSON F. HAMMOND, M.D.
Editor for Medical Literature Abstracts . GEORGE HALPERIN, M.D.
Assistant Editor . . . . WAYNE G. BRANDSTADT, M.D.

Subscription price . . Fifteen dollars per annum in advance
Cable Address . . . . "Medic, Chicago"

NATIONAL NURSE WEEK

National Nurse Week, which will be observed October 11-16, was established by an act of the Congress and proclaimed by President Eisenhower to acknowledge the contributions nurses are making to the health, welfare, and defense of the nation. Because no other profession is so closely allied with nursing, physicians take special note of this tribute to the nearly half million professional and practical nurses who work with them side by side throughout the year. National Nurse Week is an auspicious occasion for the physician to inaugurate in his medical society a year-long program to inform the public of the services and requirements for providing adequate care and nursing education and of the need for recruiting more young women to the profession. The American Medical Association, one of the sponsors of this week, has worked for many years, through its membership on the Joint Commission for the Improvement of the Care of the Patient, the Committee on Careers in Nursing, and its own recently established Committee on Nursing Service, to alleviate the nursing shortage, recommend training courses for the various grades of nurses, and strengthen the economic security of nurses.

Today, America is served by more nurses than at any time in its history. Nearly 400,000 registered professional nurses and 75,000 licensed practical nurses are providing care in the homes, hospitals, schools, factories, clinics, and military services of the nation. Yet a nursing shortage exists; more than 50,000 professional nurses are needed to meet essential civilian demands. Another 60,000 practical nurses could be employed this year if they were available.

There are several reasons for the prevailing shortage of nurses. More hospitals and health agencies are being built or expanding their facilities and services. More persons go to hospitals, thanks to the growth of private health insurance plans. More babies are being born (90% of them in hospitals), and people are living longer, with the result that the population has more than doubled since 1900. Health education programs are influencing the public to seek medical and nursing care readily. New drugs and medical treatments require more and more highly skilled nurses. These reasons for the shortage of nurses should spur physicians on to help enlist more young women in the nursing profession. Currently 2.4% of the employed professional nurses are men. Men enter nursing at a rate of less than 500 a year, but those who do become professional nurses find their services much in demand. There are several schools of nursing for men only, and an increasing number of nursing schools are becoming coeducational.

"Progress in nursing means better health for the nation" is the theme of National Nurse Week. This observance provides an opportunity for physicians to focus public attention on the achievements of nursing and to lend their community leadership, cooperation, and support throughout the year to programs of nursing education and recruitment.

ANTIBIOTIC-RESISTANT MICROCOCCI (STAPHYLOCOCCI)

Browning, working in Ehrlich's laboratory, found, in 1907, that he could protect mice against a highly lethal strain of a trypanosome with trypan red, trypan blue, and parafuchsin. This strain however, could become resistant to all three of the above agents. Browning concluded that resistance was a permanent characteristic of the invading parasites. To prevent chronicity of the infection and to protect against appearance of resistant parasites, he suggested energetic and aggressive treatment with a combination of drugs selected on the basis of susceptibility tests carried out in the laboratory. The same phenomenon of the emergence of drug resistance on the part of the bacteria was to repeat itself once more, this time with the sulfonamides and the antibiotics.

Spink,[1] in a recent contribution to the subject of micrococcic infections, emphasized that of all the microorganisms the Micrococcus has been the most consistent in showing resistance to the action of the antibiotics. In 1941 he recorded favorable observations on the treatment of micrococcic bacteremia with sulfapyridine and sulfathiazole.[2] Subsequent results, however, were much less encouraging. The introduction of penicillin into the treatment of staphylococcemia in 1942 resulted in a precipitous drop of mortality to 28% at the University of Minnesota Clinic, according to Spink. Excellent clinical results with penicillin were indicated in many clinics. Within five years after its introduction, however, many therapeutic failures were recorded, and these were associated with the emergence of penicillin-resistant strains of Micrococcus.

Good therapeutic results could still be obtained by the judicious use of large amounts of penicillin and other antibiotics in the treatment of micrococcic endocarditis as recorded by Dowling and his associates.[3] The appearance and dissemination of antibiotic strains of Micrococcus is associated with a rising incidence of therapeutic failures and with an increase in the mortality rates of patients with micrococcic septicemia. The mortality rate from the infection rose, according to Spink, to 50%.

---

[1] Spink, W. W.: Staphylococcal Infections and the Problem of Antibiotic-Resistant Staphylococci, A. M. A. Arch. Int. Med. **94**: 167-196 (Aug.) 1954.

[2] Spink, W. W.; Hansen, A. E., and Paine, J. R.: Staphylococcic Bacteremia: Treatment with Sulfapyridine and Sulfathiazole, Arch. Int. Med. **67**: 25-35 (Jan.) 1941.

[3] Dowling, H. F.; Lepper, M.; Caldwell, E. R., and Spies, H. W.: Staphylococcic Endocarditis: An Analysis of 25 Cases Treated with Antibiotics, Together with a Review of the Recent Literature, Medicine **31**: 155-176 (May) 1952.

Many clinicians have now observed that strains of Micrococcus that were sensitive in vitro to the sulfonamides and to penicillin were now developing strains that were resistant to both. Thus, Barber and Rozwadowska-Dowzenko[4] reported from England on the steady increase in the incidence of penicillin-resistant strains of Micrococcus pyogenes in cases of infection. They found that of 100 cases of infection of Micrococcus pyogenes in one hospital investigated in 1948, 59 yielded penicillin-resistant organisms. The same hospital had had an incidence of 14.1% in 1946 and 38% in 1947.

In 1951 Spink[5] reported that about 50% of strains isolated from patients were resistant not only to penicillin but to streptomycin as well. The same strains were found to be quite susceptible to the action of chlortetracycline, oxytetracycline, and chloramphenicol. As the population became exposed to these new antibiotics, the picture changed once more, and by the end of 1953 strains were being isolated that were resistant to these newer antibiotics. These observations, Spink concluded, indicate that when a sulfonamide or an antibiotic is used promiscuously and intensively in a community, resistant strains of Micrococcus will make their appearance and will parasitize a significant segment of the population.

The close correlation between penicillin resistance of micrococci and their ability to produce penicillinase was first pointed out by Bondi and Dietz.[6] Finland and Haight[7] found that, while previous antibiotic therapy of any given patient may be an important factor in the occurrence of strains resistant to that antibiotic, the widespread use of antibiotics may be of equal or of even greater importance in the increase in the incidence of micrococci that are resistant to these antibiotics. Dowling and his associates[3] have carried out epidemiological studies that substantiate the concept that the incidence of carrier rates and infections caused by antibiotic-resistant strains of Micrococcus is related to the use of the antibiotics. They showed that the intensive use of erythromycin in a hospital was associated with a rising incidence of erythromycin-resistant strains and that when the use of the antibiotic was restricted there was a corresponding fall in the carrier rate of resistant strains within a few months. The observations of the group at the University of Minnesota is in accordance with these data.

If the phenomenon of resistance to an antibiotic on the part of the Micrococcus is one of adaptation, what are some of the possible mechanisms? Resistant cells within a bacterial population may arise spontaneously through mutation and proliferate in the absence of penicillin. This explanation may apply to strains that are resistant to penicillin, even though the population has not come in contact with the antibiotic. Demerec[8] presented evidence to indicate that resistance is not induced by the action of penicillin on bacteria but originates in the mutation of strains and that penicillin acts as a selective agent to eliminate nonresistant organisms. Mutants that are resistant to the destructive action of a given antibiotic may appear spontaneously in a bacterial population. These resistant cells arise and reproduce totally independently of the presence or absence of an antibiotic. The antibiotic selects out or kills the sensitive cells, permitting the resistant cells the opportunity to reproduce and to present eventually a uniformly resistant culture.

Another mechanism suggests the ability of the microorganism to adapt itself metabolically so as to escape the effect of the antibiotic. Bacterial resistance need not depend on genetic factors, it may occur through enzymatic activity, a temporary metabolic adjustment to an unfavorable environment. The development of resistance may, of course, be the result of the combination of the mentioned mechanisms. These resistant strains of Micrococcus have an enzyme, penicillinase, which inactivates penicillin. Penicillin-resistant micrococci isolated from man are almost always penicillinase-producing strains.

Treatment of severe types of Micrococcus infections presents, despite modern advances in therapy, an important and difficult task for the clinician. It is, above all, important, as Spink stresses, to isolate and identify the invading micro-organism. All suppurating and necrotic tissues and cavities should be drained surgically. Treatment with antibiotics should be instituted as soon as possible and preferably with a combination of antibiotics. The antibiotic should be selected that has been shown by clinical experience to be most effective against the majority of the strains. In vitro tests should be carried out to determine the sensitivity of the culture to a number of antibotics. The antibiotic treatment for micrococcic sepsis must be aggressive and persistent, and the treatment must not be discontinued too soon.

WARNING ABOUT INSECTICIDE FUMIGATORS

Elsewhere in this issue (page 607) is a report of the Committee on Pesticides on the abuse of insecticide fumigating devices. The current report reemphasizes previous Committee warnings about the indiscriminate use of insecticide volatilizing devices in the home and presents new evidence of the harm resulting from the highly questionable tactics used to promote the sale of these devices. Many "electrically controlled bug killers" are being advertised in such a manner as to encourage dangerous misuse of the insecticidal poison they dispense. Despite actions and representations by government and consumer groups, certain promoters of these contrivances continue to make untrue claims for safety. The Committee presents a typical "case history" of the promotional tactics of a distributor of an insecticide fumigator and reports of injury in children seriously poisoned by the chemical employed therein. Insecticide fumigating and vaporizing devices have been reported as one of the leading causes of consumer complaints regarding pesticides for the past several years. They may be expected to continue to be a problem as long as false and misleading claims prevail in their advertising.

---

4 Barber, M., and Rozwadowska-Dowzenko, M.: Infection by Penicillin-Resistant Staphylococci, Lancet 2:641-644 (Oct. 23) 1948.

5. Spink, W. W.: Clinical and Biologic Significance of Penicillin-Resistant Staphylococci, Including Observations with Streptomycin, Aureomycin, Chloramphenicol, and Terramycin, J. Lab. & Clin. Med. 37:278-293 (Feb.) 1951

6. Bondi, A., Jr., and Dietz, C. C.: Penicillin Resistant Staphylococci, Proc. Soc. Exper. & Biol. Med. 60:55-58 (Oct.) 1945.

7. Finland, M., and Haight, T. H.: Antibiotic Resistance of Pathogenic Staphylococci: Study of Five Hundred Strains Isolated at Boston City Hospital from October, 1951, to February, 1952, A. M. A. Arch. Int. Med. 91:143-158 (Feb.) 1953.

8. Demerec, M.: Production of Staphylococcus Strains Resistant to Various Concentrations of Penicillin, Proc. Nat. Acad. Sc. 31:16-24 (Jan.) 1945.

ORGANIZATION SECTION

STATUS OF MEDICAL CIVIL DEFENSE PLANNING IN STATES

The Council on National Defense of the American Medical Association recently completed a survey of the status of medical civil defense planning in the states and territories. In conducting the survey a series of 30 questions was used. Questionnaires were sent during April to directors of state civil defense departments and to chairmen of emergency medical service committees of all state and territorial medical societies. A copy of the questionnaire was also forwarded to the executive secretaries of all state medical societies for their general information and for such additional comments as they might consider appropriate. The questionnaires were returned either by the director of civil defense or by the chairman of the emergency medical service committee from all but six of the states. Following is a summary of the results of the survey. Complete results will be made available to interested persons by the Council on National Defense upon request. The results of the survey are intentionally summarized in terms of those things that the states have *not* done rather than what they *have* done. The adoption of this procedure does not represent a failure on the part of the Council to recognize and appreciate the outstanding and tireless work done by many individual physicians in the field of medical civil defense, but rather is an effort to present factually the lack of real preparedness in some areas.

STATUTES AND LEGISLATION

Prior to the survey, the Council had on file a considerable amount of general information about civil defense legislation in the 48 states, including citations and dates of enactment. The information received in the 1954 survey enabled the Council to bring this material up-to-date. The survey revealed that there is a civil defense law of one kind or another in every state from which information was received. It may or may not be significant that in at least 13 states no amendments have been made to the State Civil Defense Act within the last year. This may well be due to the fact that some state legislatures meet biannually and therefore were not in session in 1954. However, it definitely is of concern to note that in at least 10 of the states the basic legislation does not appear to be applicable to natural disasters.

APPROPRIATIONS AND STAFFING

It is difficult to make general statements about requirements in appropriations or staffing in civil defense that are applicable to all the states, owing to the great diversity in population, resources, strategic location, and many other factors. The survey revealed that the total paid civil defense staff ranged from one person in Idaho to 116 persons in California. The total number of persons on the *medical* staff ranged from none in several states to 43 in New York. It is obvious from the survey that many of the states have small civil defense staffs. Information also indicates that in many states the state health officials are also serving in civil defense medical capacities.

The state with the largest appropriation for fiscal year 1954 is New York, with $1,494,000; the second largest is California, with $1,191,894; the third largest is Connecticut, with $375,201; and the fourth in rank is Virginia, with $316,270. The four highest-ranking states in terms of amounts appropriated for *medical* civil defense purposes for fiscal year 1954 are: New York, $438,000; Massachusetts, $75,000; Connecticut, $62,550; and California, $51,048. In at least 18 states the total amount appropriated for civil defense for fiscal year 1954 was smaller than that appropriated for fiscal year 1953. In about 19 states the amount for fiscal year 1954 is the same as for fiscal year 1953, and in only about 5 states is the amount for fiscal year 1954 larger than for fiscal year 1953.

It should be observed that some states have a conditional appropriation authorization for use in case of emergency, such as that of Alabama, $250,000 for fiscal year 1954. In some states the amount appropriated for medical civil defense is designated for specific things, such as supplies, or a specific amount is allotted for administration. Some appropriation acts do not specify when the money is to be spent; further, it appears that in a number of states no specific sum for medical activities is specified in the appropriation act itself.

MEDICAL PLANNING AND HOSPITALS

The information received disclosed that at least seven states still do not have a written civil defense plan and that six of the states that do have a written plan do not include natural disasters in the plan. Of considerable concern is the fact that in seven states it was indicated that no specific assignments had been made to physicians in case of emergency; in nine states no specific assignments had been made to dentists; in nine states, no specific assignments to veterinarians; in nine states, no specific assignments to pharmacists; in eight states, no specific assignments to nurses; and in eight states, no specific assignments to other allied health personnel. It was also revealed that assignment lists in 10 of the states apparently are not kept on a current, or up-to-date, basis.

According to the survey, in about 21 states there appeared to have been no civil defense committees established on a regional basis; in 18 states, no civil defense committees established on a district basis; in 9 states, no civil defense committees established on a county basis; and in 9 states, none established for large cities.

The participation of hospital administrators and officials in drafting civil defense plans is considered to be important for a number of reasons. The survey revealed, however, that in at least eight states hospital administrators did not participate in formulating the civil defense medical plan. In nine states no plans have been made for improvised hospitals, and in nine states no plans have been made for mobile first aid stations.

TRAINING

A variety of information was requested in the section of the questionnaire devoted to civil defense training. Some of this information is of considerable importance in presenting an overall picture, while some of the questions were asked primarily for education purposes.

In at least 15 states no manuals have been issued for training purposes, and about 14 states have not been divided into regions for training or other purposes. It appears that 10 states, as of the time of the completion of the questionnaire, had had no civil defense drills; in 16 states no drills had been conducted in metropolitan districts; in 16 states no drills had been conducted in counties; in 18 states no drills had been conducted on a regional basis; and in 16 states no drills had been conducted on a state-wide basis. It should be observed here, however, that these questionnaires were completed and returned to the Council prior to the nation-wide civil defense alert that was held under the auspices of the Federal Civil Defense Administration in the middle of June, 1954.

Information received indicates that in 16 states no staging areas have been designated, at least for medical personnel. In at least three states there has not been any specific coordination of the various civil defense divisions and activities within the state.

With reference to civil defense health instruction in the schools and colleges, the survey disclosed that in 17 states no civil defense courses of any kind are given in the high schools; in 18 states no civil defense courses are given in professional schools; and in 21 states no civil defense courses are given in medical postgraduate schools.

COMMENTS AND SUGGESTIONS BY OFFICIALS

The final item on the questionnaire requested comments, suggestions, and recommendations as to how the Council on National Defense could be of most assistance to state officials and medical society officials in medical civil defense planning and operations. A wide variety of helpful suggestions was made. They will be presented for the consideration of the Council at its next meeting in October.

Summary of Suggestions Made on Questionnaire

1. Encourage interest, and make officers of state medical societies, as well as individual physicians, more aware of the need for civil defense.
2. Encourage state legislatures to appropriate more money for civil defense.
3. Encourage more interest on part of state health departments.
4. Supply specific information about extent of need for mobile first aid stations.
5. Supply specific instructor training manuals—material on hand is too general.

6 Expedite assignments of improvised hospitals to regions and target areas

7. Provide more civil defense conferences and information.
8. Sponsor biological warfare courses on a high level for state officials.
9. Sponsor gas warfare defense courses for high-level officials.

10 Survey total hospital liabilities, etc.

11. Impress on physicians the fact that they may have to treat 100 times more persons in a given period than they now think they will.
12. Encourage standardized procedures in treatment and other fields.

MEDICAL AND CHIRURGICAL FACULTY OF THE STATE OF MARYLAND

To permit readers of The Journal *to become better acquainted with the activities of the state medical associations, articles describing them will appear from time to time in these pages.*—Ed.

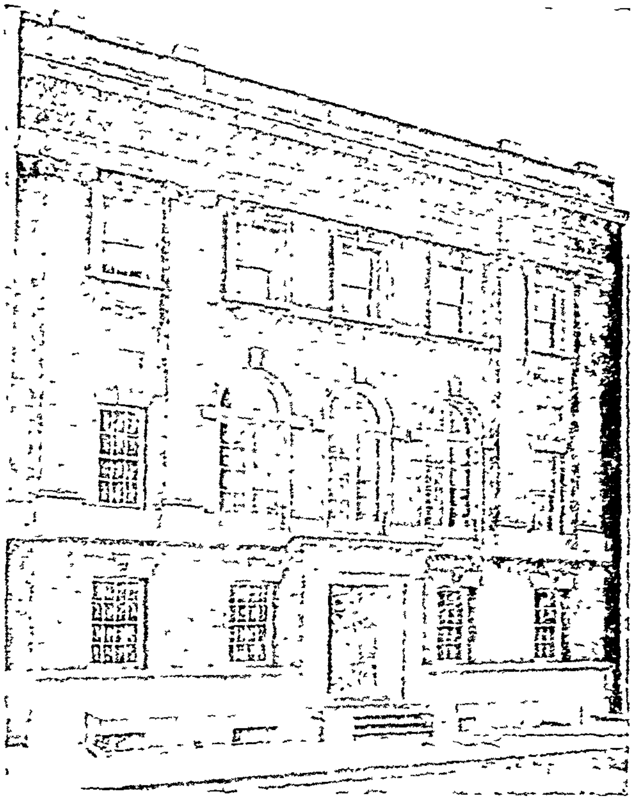
On Jan. 20, 1799, members of the medical profession in Maryland secured from the state legislature a charter that authorized them to establish and incorporate a Medical and Chirurgical Faculty. It conferred on the society the right to "elect by Ballot, Twelve persons of the greatest medical and chirurgical Abilities in the State, who shall be styled the Medical Board of Examiners for the State of Maryland . . . whose duty it shall be to grant Licences to such Medical and Chirurgical gentlemen as they, either upon a full examination, or upon the production of Diplomas from some respectable College, may judge adequate to commence the practice of the Medical and Chirurgical Arts. . . ." According to John C. French, librarian emeritus of Johns Hopkins University, Baltimore, the original name, which has remained unchanged through the years, "stemmed from the medieval University of Paris, where graduates of medicine, by virtue of being a body exercising a liberal profession, of which they had a monopoly, became the distinctive faculty." The first meeting of the Medical and Chirurgical Faculty of the State of Maryland was held in Annapolis in June, 1799. In the previous year, Dr. Charles F. Wiesenthal, surgeon general of the state, had taken the lead in the creation of a Baltimore Medical Society, which he desired to make statewide, with authority from the legislature to examine and license candidates and to prevent the incompetent and unauthentic practice of medicine. However, Dr. Wiesenthal died in June, 1789, and within a year the society was dissolved.

Among the charter members of the Medical and Chirurgical Faculty were Dr. John Archer of Harford County, clergyman, Revolutionary War major, legislator, judge, and member of Congress, who in 1768 had received from what is now the University of Pennsylvania the first diploma in medicine awarded by an American medical college; Dr. William Beanes Jr., whose activity in caring for the wounded at the battle of Bladensburg caused his arrest by the British and gave his friend Francis Scott Key "the inspired moment for the writing of the 'Star-Spangled Banner' "; and Dr. Charles Alexander Warfield, captain of cavalry, who had taken the lead in the Annapolis tea party.

The efforts of the young society to establish a "college of physicians" met with success when, on Dec. 18, 1807, the legislature passed a law founding the College of Medicine of Maryland. By an act of Dec. 29, 1812, the college was authorized to "constitute, appoint, and annex to itself" other faculties and so become part of a university of Maryland. In 1827, six members of the society organized their own school of medicine, chartered as the medical department of Washington College, Pa., and called the Washington Medical College of Baltimore.

Another major project of the society was the establishment of a library. On June 8, 1830, a five member committee was appointed with authority "to purchase such periodicals and other standard works in medicine, as they deem proper; to be placed in some suitable situation for the use of the members of the Medical and Chirurgical Faculty of the State . . . and to draw on the Treasurer for an amount not exceeding $500 for the purpose." First housed in the homes of physicians who acted as librarians, then in the Mercantile library, it was eventually quartered in the second floor of the faculty headquarters, and subsequently, as it grew, in half a dozen different buildings. At the time of its centennial celebration, April 23, 1930, the library that had begun with 274 books had increased to 45,000.

According to Mr. French, whose "Brief History of the Medical and Chirurgical Faculty of Maryland" is part of the volume published in 1949 in celebration of the sesquicentennial of the faculty, a severe setback to medical practice occurred in 1838 when the cult of "Thomsonian medicine" descended on the state. "This was a fantastic cult that originated in New England and so caught popular fancy as to let loose on the country a locust-like plague of so-called 'botanic physicians.' These persons used only medicines derived from vegetables, preferring them on the philosophical ground that they grow upward into the light, whereas mineral remedies dug from the earth savor of the grave; and deciding by occult means what herbs should be used for what ailments. When prosecuted in Maryland, they brought pressure to bear on the State Legislature; and, ultimately in 1838 secured the passage of a loosely-drawn act which made it lawful 'for each and every person, being a citizen of this state, to charge and receive compensation for their services and medicine in the same manner as physicians are permitted to do.' " Although the Thomsonian craze was short-lived, the legislation was not remedied until 1892, when an act was passed that created two boards of medical examiners, one for the regular profession and the other for the homeopathic school, and that supported the authority of both by penalties for illegal entrance into practice.



Headquarters of the Medical and Chirurgical Faculty of the State of Maryland at 1211 Cathedral St., Baltimore.

In 1839 the Maryland faculty appointed a committee to correspond with the profession in other states regarding a preliminary meeting of a national organization to be held in Baltimore. The proposed meeting was, however, held in New York in May of that year. At a second tentative gathering in Philadelphia in 1847, on invitation of the delegates of the Medical and Chirurgical Faculty of Maryland, it was decided to hold the first annual convention of the American Medical Association in Baltimore in 1848. The annual convention of the Association was also held in Baltimore in 1866 and in 1895.

In 1839, members of the society who had been licensed to practice dentistry founded the Baltimore College of Dental Surgery, and in 1841 a college of pharmacy was similarly incorporated.

The faculty early took an interest in the promotion of public health measures, with particular emphasis on child health. When a state board of health was created in Maryland by an act of the general assembly, January, 1874, the governor named as its president Dr. Nathan R. Smith, who had served as president of the faculty from 1870 to 1872.

The history of the faculty is replete with names of men who have made medical history: Drs. Nathan R. Smith, Aaron and Harry Friedenwald, William H. Welch, William Osler, Eugene F. Cordell, Hugh H. Young, John Whitridge Williams, William S. Halsted, Thomas S. Cullen, John M. T. Finney, Harvey B. Stone, Llewellys F. Barker, and John Ruhräh. Three of its members have served as president of the American Medical Association: Drs. William H. Welch, William S. Thayer, and Dean D. Lewis.

After occupying a series of rented homes, on May 13, 1909, the faculty dedicated its own headquarters at 1211 Cathedral St., Baltimore, naming the assembly room Osler Hall in honor of Dr. William Osler, who had vigorously advocated the establishment of the new headquarters. In 1935 the buildings at 1215 and 1217 were purchased and converted into an annex with offices for the board of medical examiners and the nursing organizations of the state. The main building houses the offices of the state association, including those of the *Maryland State Medical Journal*, and the Baltimore City Medical Society. Offices have also been made available to the Medical Care Committee of the Maryland State Planning Commission during its special surveys. Osler Hall, in the main building, accommodates about 400 people, and a smaller meeting room seats about 75. The building is used for the annual meetings of the association and for meetings of the Baltimore City Medical Society as well as meetings of other groups allied in medicine. The Board of Medical Examiners, the Maryland State Board of Nursing, and the Maryland State Veterinarian's Board use Osler Hall for their examinations. So rapidly has the association grown, however, that plans are under way for larger accommodations, either through additions to the present quarters or through a move to a new locality. The membership now totals 1,855. Officers for the current year are: Dr. George H. Yeager, Baltimore, president; Drs. Waldo B. Moyers, Hyattsville, Samuel Whitehouse, Baltimore, and Charles J. Foley, Havre de Grace, vice-presidents; Dr. Everett S. Diggs, Baltimore, secretary; and Dr. J. Albert Chatard, Baltimore, treasurer.

WASHINGTON OFFICE

This is one of a series of brief statements explaining the work of various departments of the American Medical Association.—Ed.

The Washington Office of the American Medical Association, now in its 11th year, is charged by the Board of Trustees with (1) collecting and disseminating information on federal legislation and activities of governmental agencies of interest to the medical profession and (2) serving as the instrument through which policies, opinions, and activities of the Association are made known to Congress and federal departments. The Washington Office also maintains liaison between Congress and constituent societies of the A.M.A. Individual members of Congress are furnished with information for speeches, discussions, and questions. Washington Office representatives, in line with the Association's policy, also work with congressional committee members and their staff to effect passage of sound medical legislation. By the same token, staff members maintain close contact with Congress to prevent passage of bills detrimental to good medical care and practice. The office coordinates the timing and appearance of A.M.A. representatives called to testify at hearings on medical and related bills. At appropriate times the office communicates with other associations to enlist their support for the A.M.A.'s position on legislation. It also maintains constant liaison with the military authorities, federal agencies, and other groups to interpret A.M.A. policy on legislation.

In its informative role, the office publishes the weekly AMA Washington Letter, which reports on activities in the legislative, executive, and judicial branches of the government. During the sessions of Congress the letter includes an up-to-date, running account of bills of medical interest, from the day they are introduced by a member of Congress until they are signed by the President and become public law. The letter, which is supplied only on request, is sent to A.M.A. and state society officials, journal and bulletin editors, and others with a direct interest in medical legislation. From time to time, the letter is supplemented by special reports on subjects of importance, including testimony of A.M.A. witnesses. A relatively recent innovation is the publication and distribution of "The Month in Washington," a summary of news tailored for the various state and regional journals.

To further disseminate information on the Washington scene, the office writes the weekly Washington News column for The Journal and prepares for periodic publication in the Organization Section the column Federal Medical Legislation. The director and his staff conduct a biennial tour of all states for the dual purpose of acquainting physicians concerned with health legislation with the operations of the office and the status of bills and, in turn, gathering firsthand information on the newly elected members of Congress whom staff members subsequently will be contacting.

ACTIONS BY THE BOARD OF TRUSTEES

At its recent meeting, the A.M.A. Board of Trustees appointed a liaison committee to work with government officials whenever called or when the Board feels it is necessary to consult with any officials on matters of importance to medicine or the profession. This committee is made up of President Walter B. Martin, President-Elect Elmer Hess, Board Chairman Dwight H. Murray, Trustee David B. Allman, who is chairman of the Committee on Legislation, and Speaker James R. Reuling. The Board also appointed a committee to study problems relating to oral surgery, composed of Trustee Gunnar Gundersen, chairman; President Walter B. Martin, Trustee Leonard Larson, and Drs. Paul W. Greeley, Chicago, and Lawrence R. Boies, Minneapolis. The committee was appointed in response to a report acted on by the House of Delegates in San Francisco last June, which dealt specifically with the definition and scope of oral surgery. The reference committee to which the report was referred recommended that the Board appoint a committee "representing all interests involved" to study the problem.

The Board, in accordance with over-all federal civil defense planning, approved the utilization of space at the Culver Military Academy, which is 108 miles southeast of Chicago, as a rendezvous in case of a national emergency. The trustees of Culver offered the use of Culver Inn, its auxiliary buildings, and Inn Annex as A.M.A. headquarters. These quarters would serve the Board of Trustees, key A.M.A. councils, and necessary A.M.A. staff personnel. The total facilities will take care of 68 persons. Storage space for necessary A.M.A. files, including punch cards listing physicians available for medical service, is immediately available. The Board also authorized preparation of suitable maps showing the route to Culver by highways, railroads, and air from Chicago, New York, and other principal cities.

The Board appointed Dr. Wingate M. Johnson, Winston-Salem, N. C., to membership on the advisory committee to the State Journal Advertising Bureau. He will succeed Dr. Stanley B. Weld, whose term will expire in December, 1954, and who is ineligible for reelection. The Board also appointed to the same committee Dr. R. G. Mayer, Aberdeen, S. D., to fill the unexpired term of Dr. Bruce Underwood, who has resigned.

MIAMI CLINICAL MEETING

The Miami Clinical Meeting will be held in Dinner Key Auditorium, where physicians will find ample accommodations. There is a large parking area for those who expect to drive their own cars, and bus and taxi service will also be available. Inside the auditorium is an excellent restaurant, as well as a snack bar, which will take care of all food necessities. The visiting physician who comes in the morning can stay all day, because the program is so arranged that there is something to do, to see, and to hear every minute from early morning until late afternoon. The meeting opens at 8:30 Monday morning, Nov. 29, with exhibits and motion pictures. The opening general session will be at 10:25 a. m.

The lecture program includes subjects of broad interest in the fields of medicine, surgery, pediatrics, neuropsychiatry, obstetrics, and gynecology. Outstanding authorities from all over the country will be there to present their talks and to answer questions, and there will be a dozen symposiums and panels. Many of the practical everyday problems of the physician will be covered.

The Scientific Exhibit will include 80 exhibits and will be open all day long each day. Demonstrators will be on duty continuously so that the visiting physician may ask questions and discuss his problems. Special features will include the fracture exhibit, where demonstrations will be conducted by leading surgeons of the country. The exhibit committee on fractures announces that facilities will be available for conferences with individual physicians who have fracture problems, and such physicians are requested to bring roentgenograms for cases they wish to discuss. Another feature will be manikin demonstrations on problems of delivery. Leading obstetricians of the country will be on duty to answer questions and confer with physicians who have particular problems on this subject.

Motion pictures will be shown continuously on subjects that will interest the physician in general practice, and many of the authors will be present to discuss their films. The motion picture program is gaining more and more interest at the A. M. A. meetings. A special feature will be a film program on Tuesday night at the McAllister Hotel, where there will be, among other films, a première showing of two outstanding films, entitled "Lung Cancer: The Problem of Early Diagnosis," sponsored by the American Cancer Society, and "Differential Diagnosis of the Arthritides (Rheumatoid, Osteo, and Gouty)" by Dr. William B. Rawls, New York. The authors will introduce their films, and a question and answer period will follow each presentation.

Color television has become an important part of all American Medical Association meetings and will again be shown in Miami. The programs will originate at the Jackson Memorial Hospital and will bring the operating room directly into the lecture hall. The visiting physician at Dinner Key Auditorium will be able to see more of the operation than he would if he were in the operating room. Physicians who cross the country for the Clinical Meeting in Miami will be well repaid for their efforts.

MENTAL HEALTH CONFERENCE

A two-day mental health conference of state and county medical society representatives drew an attendance of 75 leaders in the field. The meeting, held in A. M. A. headquarters in Chicago, was designed to bring about a closer working relationship between the psychiatrist and the general medical practitioner and other specialists. Thirty-five state medical associations were represented, most of them by chairmen of mental health committees. Dr. Leo H. Bartemeier, Detroit, chairman of the A. M. A. Committee on Mental Health, was chairman of the meeting. A variety of problems was discussed. Mental health programs as carried on in three states—Virginia, Texas, and Connecticut—were outlined on the opening day. Other subjects included the advances made in mental health care, the part psychiatric associations can play locally in cooperating with state and county societies, the neuropsychiatric program of the Veterans Administration, and how the Woman's Auxiliary to the A. M. A. can cooperate with local medical committees on mental health. The second day's session included an address by Dr. Marvin A. Block, Buffalo, N. Y., chairman of the A. M. A. Subcommittee on Alcoholism, on the functions of his committee at state and local levels. The conference rejected a proposal to make alcoholism a reportable disease. Recommendations were made for the establishment of committees on alcoholism in all medical societies, where feasible; inclusion of proper teaching on alcoholism in medical and other professional schools and postgraduate education on alcoholism in these fields; and cooperative and other medical and hospital insurance plans to accept and treat alcoholism as a disease, with hospital authorities being urged to accept persons for treatment as alcoholics.

RURAL HEALTH PROGRAM

The A. M. A. Council on Rural Health and its advisory committee, made up of representatives from several national, agricultural, and educational organizations, held a three day meeting in Chicago recently and formulated the following three-point program on which the Council will concentrate during the next year. 1. More physician participation with lay groups. Persons in rural areas are asking for and welcoming assistance and advice. 2. More cooperation with country newspapers and farm journals, in supplying health information. 3. Bringing persons in rural areas closer together by suggesting that county medical societies invite county extension agents and farm leaders to appear on their programs and that rural organizations invite physicians to speak to them. Plans for the forthcoming 10th National Conference on Rural Health were formulated. This annual conference is to be held at the Schroeder Hotel, Milwaukee, Wis., Feb. 24-26, 1955. As in previous years, the Thursday morning session preceding the formal opening of the conference will be for physicians. This meeting will be devoted to problems confronting physicians who are members of state rural health committees or committees handling rural health programs. The formal sessions of this conference will begin Thursday afternoon and continue through the Saturday luncheon session.

RESPONSE TO A. M. A. FILMS

The American Medical Association has produced three different films and sponsored the television showing of a fourth during the last three years at a total cost of $159,577.18. Public Relations Director Leo Brown has submitted a breakdown on the costs and the response received. The film "Your Doctor," which was revised several times and finally adapted for television, cost $104,267.80 and was seen by an estimated total audience of 18,620,526.

The film "Operation Herbert" cost $20,184.38, and the estimated club and television audience seeing this film during the past year was 6,669,751.

The film "A Citizen Participates" was produced by Young America Films for showing in schools, but the A. M. A. bought the television rights and 25 prints for $5,125. The estimated television audience that has since seen this film is 3,249,000. "A Life to Save," a film built around quackery in medicine, is new. This 27-minute color film cost the A. M. A. $30,000, and it is estimated that it will be shown by more than 100 television stations and will reach an audience of 6 million persons in the next 12 months.

CHANGES IN A.M.A. LAW DEPARTMENT

At a recent meeting in Chicago, the Board of Trustees initiated several changes relative to the operation of the A.M.A. Law Department, now headed by C. Joseph Stetler. Effective immediately, the department will service the Committee on Legislation, the Judicial Council, the Council on Constitution and Bylaws, and the Committee on Medicolegal Problems. John M. Martin Jr. is designated Executive Secretary of the Committee on Legislation; E. J. Holman, Executive Secretary of the Judicial Council; and George Hall, Executive Secretary of the Council on Constitution and Bylaws. For the present, Mr. Stetler will serve in the capacity of Executive Secretary of the Committee on Medicolegal Problems. The authority and responsibilities of these councils and committees have not been changed. All legal matters that formerly were handled by other departments in the headquarters will be referred to the Law Department.

MEDICAL NEWS

ARIZONA

Crippled Children's Program.—Contributions totaling more than $93,000 were given to the crippled children's program during the recent fund-raising campaign of the Arizona Society for Crippled Children and Adults, exceeding by $17,000 the highest previous collection. Funds contributed will be used to finance the activities of the organization, including the Samuel Gompers Memorial Clinic in Phoenix, Homecrafters adult rehabilitation in Tucson, a special speech program in Yuma, the statewide itinerant clinic program of diagnosis and therapy, and county programs of individual assistance to handicapped persons. Five-week clinics are to be held in Yavapai, Gila, Yuma, Cochise, and Graham counties. Daily physical, speech, and occupational therapy for handicapped children will be provided in addition to training of parents in techniques of handling crippled children, especially those with cerebral palsy. An itinerant clinic program will be carried out in Mohave, Coconino, Navajo, Apache, Greenlee, Pima, and Pinal counties. The dates for these clinics have not been set.

CALIFORNIA

Gold-Headed Canes Awarded.—The gold-headed cane, traditional symbol of "qualities most representative of the true physician" among medical students being graduated from the University of California School of Medicine, San Francisco, was awarded this year to Mervyn F. Burke of Berkeley. The award was made at pregraduation ceremonies by Dr. William J. Kerr, emeritus professor of medicine, who then gave to Dr. Arthur L. Bloomfield, professor of medicine, Stanford University School of Medicine, a gold-headed cane that he himself received a year before. This cane is passed on each year to the speaker chosen, for outstanding physicianship, to address the senior class at its pregraduation ceremonies.

Course on Industrial Medicine.—For physicians of southern California, industrial nurses, industrial hygienists, attorneys, claim adjusters, and persons interested in industry, the University of California Extension will inaugurate a course, "The Application of the Principles of Industrial Medicine to Private Practice," at the University Extension Center, 813 S. Hill St., Los Angeles, where a fall session will meet from 7:30 to 9:30 p. m. on Wednesdays, Oct. 13 through Dec. 8, 1954, and a spring session from Feb. 2 to March 23, 1955. Requests for information should be made to Dr. Thomas H. Sternberg, Division of Postgraduate Medical Education, University of California Medical Center, Los Angeles 24, or by telephone to ARizona 74201 or BRadshaw 26192. Fee for the entire course (fall or spring) is $40.

DISTRICT OF COLUMBIA

Dr. Gant Honored.—Mr. H. Percy Wilkins, director of the lunar section of the British Astronomical Association, recently announced, "The Lunar crater Archimedes-A will henceforth be known as Lunar Crater Gant, in honor of Dr. James Q. Gant Jr., of Washington, D. C., in recognition for his observations of lunar surface details over many years." Dr. Gant, long avocationally interested in astronomy, has his own observatory in which he has been carrying on research in observation of the moon since 1920.

Appoint Professor of Physical Medicine.—Dr. Charles D. Shields has been appointed professor and chairman of the department of physical medicine and rehabilitation at Georgetown University School of Medicine in Washington, D. C. Dr. Shields' service in the U. S. Army took him to the North African theater and to Italy, where he was chief of hospitals and medical care section of the Allied Control Commission. He was later named chief public health officer for Bavaria. He served as commissioner of health in Buffalo and as an officer in the New York State Department of Health, and practiced medicine in Buffalo in 1940-1941, returning to the military service in 1947.

FLORIDA

General Practitioners Meet in Orlando.—The fifth annual scientific assembly of the Florida Academy of General Practice will convene at the San Juan Hotel in Orlando Oct. 17 and 18. At 1 p. m. Sunday, welcoming addresses will be made by Dr. Leonard L. Weil, Miami Beach, president of the academy, and Dr. Duncan T. McEwan, Orlando, president of the Florida Medical Association. The program is open to all physicians of the state. There is no registration fee. The Orange County chapter of the academy is sponsoring the meeting, a feature of which will be the banquet at 8 p. m. Sunday. Among the guest speakers are Dr. George T. Harrell Jr., dean and professor of medicine, University of Florida School of Medicine, Gainesville, and Dr. Robert T. Spicer, former dean, University of Miami School of Medicine, Coral Gables. Out-of-town speakers include:

John E. Peterson, Los Angeles: Problems in Diagnosis of Thyroid Disease. Medical Emergencies.
Francis H. Cole, Memphis, Tenn.: Pitfalls in Diagnosis of Lung Diseases.
Joseph B. Miller, Mobile, Ala.: Use of Aerosols in Respiratory Diseases.
Robert P. Walton, Charleston, S. C.: Recent Views of Drugs Used in Heart Dysfunction.

GEORGIA

Society's Sesquicentennial Celebration.—The Georgia Medical Society, Chatham County, Georgia, is celebrating its 150th anniversary this year. Dr. Louis M. Freedman, Savannah, president of the Georgia Medical Society, has announced that there will be two days of festivities, Oct. 12 and 13, in Savannah. On Tuesday night, Dr. Richard W. TeLinde, professor of gynecology, Johns Hopkins University School of Medicine, Baltimore, will lecture on carcinoma of the cervix. On Wednesday night the society and its guests will close the celebration with a banquet and dance.

ILLINOIS

Meeting on Cardiology.—The Memorial Hospital of DuPage County in cooperation with the Chicago Heart Association will present the following program at 11 a. m., Oct. 19, at the hospital, 189 Avon, Elmhurst (phone: Terrace 2-6800): "Heart Disease in the School Age Child" by Dr. Carl J. Marienfeld, clinical assistant professor of pediatrics, University of Illinois College of Medicine, Chicago, and associate attending pediatrician, Cook County Children's Heart Station, and "Rheumatic Fever and Public Health" by Dr. Arthur E. Rikli, consultant on chronic disease, Regional Office, U. S. Public Health Service, with discussion by Drs. Edwin F. Neckermann and Ernest S. Watson, both of Elmhurst, and with audience participation. All physicians are welcome.

Chicago

Blatt Memorial Lecture.—The pediatric staff of the Cook County Hospital announces that the sixth annual Morris Lamm Blatt Memorial Fund lecture will be given Oct. 18, 8:30 p. m., in the medical amphitheatre of the Cook County Hospital. Otto Glasser, Ph.D., chairman of the department of biophysics of the Cleveland Clinic, will discuss "Medical Physics and the Neo-Atomic Age."

Women of Rotary Plan Fund-Raising Party.—The Women of the Rotary Club of Chicago will hold their annual fund-raising dessert bridge party at the Lake Shore Club of Chicago, Oct. 20. The funds raised at this annual party go to groups including the Illinois Surgical Institute for crippled children; Veterans Administration Hospital, Hines, Ill.; Salvation Army summer camp

---

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

for underprivileged children; and the blind. Gifts of cash or articles of merchandise for prizes will be welcomed. Checks, payable to the Women of the Rotary Club of Chicago, and articles of merchandise should be sent to the Women of the Rotary Club of Chicago in care of Mrs. H. R. Park, 9837 S. Damen Ave., Chicago 43.

IOWA

Meeting on Tuberculosis.—The Iowa Trudeau Society will hold its fall meeting at the Broadlawns Hospital, Des Moines, Oct. 17, 10 a. m. to 4 p. m. Dr. Daniel F. Crowley Jr., Iowa City, will preside over the morning session, which will include presentation of "Psittacosis in Iowa" by Dr. Kenneth R. Kingsbury, Ottumwa; "Diagnosis of Genitourinary Tuberculosis" and "Treatment of Genitourinary Tuberculosis" by Dr. John K. Lattimer, New York; and discussion by Dr. Rubin H. Flocks, Iowa City. The afternoon session will consist of the following program, over which Dr. Paul M. Seebohm, Iowa City, will preside:

Diagnosis and Current Treatment of Osseous Tuberculosis, Edward T. Evans, Minneapolis (discussion, Donald W. Blair, Des Moines)
Modern Practical Methods of Diagnosis and Treatment of Pulmonary Emphysema, Frank E. Martin, Minneapolis (discussion, Harold Margulies, Des Moines).
Problem of Pericarditis, David C. Funk, Iowa City.

The education committee of the Iowa Academy of General Practice will allow three hours' formal postgraduate credit for attendance at these sessions.

KANSAS

Fluoridation of Water Supplies.—Seven more Kansas cities have ordered or are planning to order fluoridation equipment for municipal water supplies, according to Willard R. Bellinger, D.D.S., director of the division of dental hygiene, state health department. These cities include: Chanute, Fredonia, Greensburg, Manhattan, Newton, Osawatomie, and Pittsburg. Dr. Billinger reports that 16 cities in Kansas have made the necessary fluoride adjustment in their water supplies, giving this protection against dental decay to the children in towns having a combined population of 143,000. Another 41 cities have adequate natural fluorine in their water supplies to make additions unnecessary.

LOUISIANA

Society News.—The Louisiana Association of Pathologists recently elected the following officers: Dr. Lawrence L. Swan, New Orleans, president; Dr. Ambrose J. Hertzog, New Orleans, vice-president; and Dr. William H. Harris Jr., New Orleans, secretary-treasurer.——Officers of the New Orleans Graduate Medical Assembly include Dr. Woodard D. Beacham, president; Dr. Donovan C. Browne, president-elect; Dr. Charles L. Brown, first vice-president; Dr. James D. Rives, second vice-president; Dr. Willoughby E. Kittredge, third vice-president; Dr. Maurice E. St. Martin, secretary; and Dr. Jules Myron Davidson, treasurer. The 18th annual meeting will be held at the Municipal Auditorium, March 7 to 10, 1955.

MASSACHUSETTS

Seminar in Pediatric Neurology and Psychiatry.—The 20th postgraduate seminar in pediatric neurology and psychiatry will be held at the Walter Fernald State School in Waltham on Wednesdays from 7 to 9 p. m. The following topics will be presented:

Oct 13, General Introduction in Child Neuropsychiatry: Organic Brain Syndromes, Psychoses and Neuroses, Clemens E Benda, Boston; Samuel Kaplan, Boston, and Miss C E Chipman, Waverly.
Oct 20, Psychotherapy with Children, George E Gardner, Boston
Oct 27, Epilepsy, Douglas Davidson, Boston, Maurice W Laufer, Riverside, R I, and Felix P Heald, Boston
Nov 3, Interpersonal Relationships in Mental Disorders, Erich Lindemann, Boston
Nov 10, Cerebral Palsies, Clemens E Benda and Heinrich G Brugsch, Boston
Nov 17, Psychosomatic Disorders, Dane G. Prugh, Boston.
Nov 24, Developmental Disorders, Paul I. Yakovlev, Boston.
Dec 1, Psychoneuroses in Children, Lucie Jessner, Boston.

Personal.—Dr. John F. Conlin, Boston, director of medical information and education for the Massachusetts Medical Society since July, 1947, has been appointed medical director of the hospital department of the city of Boston and superintendent of Boston City Hospital, a post recently created as part of the reorganization of Boston's hospital department. The post includes administrative direction of the Long Island Hospital and the Boston Sanatorium. Dr. Conlin, a member of the A. M. A. Advisory Committee on Public Relations, is president of the Massachusetts Health Conference, Inc., and of the Massachusetts Society for Medical Research.——Dr. James H. Means, formerly chief of medical service at the Massachusetts General Hospital and Jackson professor of medicine at Harvard Medical School, Boston, has been appointed acting medical director at the Massachusetts Institute of Technology, Cambridge, where he has been consulting physician on the medical staff since his retirement from the Massachusetts General Hospital in 1951. He will be in charge of all medical services at the institute until the appointment of a permanent director to succeed Dr. Dana L. Farnsworth, recently appointed Henry K. Oliver professor of hygiene at Harvard University (THE JOURNAL, Aug. 28, 1954, page 1586).

MICHIGAN

Hans Selye to Talk in Windsor.—Michigan physicians are invited to the Essex County Medical Society meeting at 6 p. m., Oct. 13, in the Prince Edward Hotel, Windsor, Canada. There will be a subscription dinner at 7 o'clock. Dr. Hans Selye, professor and director of the Institute of Experimental Medicine and Surgery, University of Montreal, will discuss "Recent Advances in the Study of Stress." Tickets are available through the Essex County Medical Society; call Mr. Boyle, CLearwater 2-1115, or Dr. Anthony T. Wachna, CLearwater 3-9393.

Cancer Conference.—The sixth Michigan Cancer Conference will be held at Kellogg Center for Continuing Education, Michigan State College, East Lansing, Oct. 14, under the sponsorship of the Michigan Cancer Coordinating Committee; Michigan division, American Cancer Society; and Southeastern Michigan division, American Cancer Society. A discussion of "Breast Cancer" and demonstration will be followed by "Cancer of the Lung" by Dr. Richard H. Meade Jr., Grand Rapids; "Cancer in Children," Dr. Clifford D. Benson, Detroit; and "Report on Recent Research in Cancer," Dr. Harry M. Nelson, Detroit. Dr. Frederick A. Coller, Ann Arbor, will preside at the luncheon session, 12:15 p. m., and will serve as moderator for the question and answer period following presentation of "Aims and Purposes of the Michigan Cancer Coordinating Committee" by Dr. C. Allen Payne, Grand Rapids, chairman.

MINNESOTA

Society News.—Dr. Howard M. Payne, professor of medicine, Howard University College of Medicine, Washington, D. C., will speak at the Oct. 14 meeting of the St. Louis County Medical Society in the Coates Hotel at Virginia. Dr. Payne, who is a member of the board of directors of the National Tuberculosis Association and has served as a director of the District of Columbia Tuberculosis Association, will present "Diagnosis and Therapy of Chronic Pulmonary Disease."

MISSOURI

Personal.—Dr. Norman Tobias, St. Louis, gave a lecture entitled "Modern Approach to Dermatological Problems," July 19, before the Turkish Dermatological Association in Istanbul, Turkey.

Cancer Conference.—The first annual Southeast Missouri Cancer Conference was held on Sept. 30 at the Southeast Missouri State College in Cape Girardeau under the sponsorship of the Missouri division of the American Cancer Society, the 10th councilor district of the Missouri State Medical Association, the American Academy of General Practice, and the Cape Girardeau County Medical Society. At the evening clinic session, problem cases in cancer diagnosis and therapy from the files of the Southeast Missouri Tumor Clinic were presented, with discussion by guest speakers, who included Dr. Irving M. Ariel, New York; Dr. Oliver H. Beahrs, Rochester, Minn.; Dr. Axel N. Arneson, St. Louis; Dr. Juan A. del Regato, Colorado Springs, Colo.; and Dr. Richard E. Johnson, Columbia.

NEW YORK

Another Centenarian.—Dr. Frederick B. Streeter, Glens Falls, oldest living alumnus of Union College and oldest living member of Kappa Alpha fraternity, observed his 100th birthday in June. The eldest son of Dr. Buell G. Streeter, who was medical director of the Army of the Shenandoah during the Civil War, Dr. Streeter began practice in Glens Falls after graduation from Albany Medical College in 1879. During his 70 years of practice, Dr. Streeter has been health officer of the village of Glens Falls and the town of Queensbury; Warren County coroner; and a member of the medical staff at Glens Falls Hospital.

General Practitioners' Meeting.—The annual scientific assembly and congress of the New York State Academy of General Practice will be held in Syracuse, Oct. 11 to 13, under the presidency of Dr. William G. Richtmyer, Albany. At 9:30 a. m. Monday Dr. Raphael Isaacs, Chicago, will discuss "Recent Advances in Anemias." Monday afternoon will be devoted to a symposium on diabetes (aspects in children, pregnancy, and surgery) by Drs. Elliott P. Joslin, Howard F. Root, and Priscilla White, Boston, followed by panel discussion by these participants and Drs. Paul A. Bunn and Maynard E. Holmes, Syracuse. The Joslin group will present a public forum on diabetes at 8 p. m. Dr. Arnold P. Friedman, New York, and his group will conduct a symposium on headaches Tuesday at 9 a. m., after which "Recent Advances in Epilepsy and Parkinson's Diseases" will be presented by Dr. Sherman F. Gilpin Jr., Philadelphia. Tuesday, 2 p. m., Dr. Eugene C. Eppinger, Boston, will consider "Problems of Heart Diseases for the General Practitioner"; Dr. Walter F. Bugden, Syracuse, "Chest Diseases—Diagnosis and Practical Points"; and Dr. J. Englebert Dunphy, Boston, "Acute Abdomen—Differential Diagnosis; Bedside Practical Points." The foregoing physicians and Drs. John G. F. Hiss and Albert G. Swift, Syracuse, will end the Tuesday session with a panel discussion. Wednesday at 10:30 a. m. a symposium on cancer will be held, and at 2 p. m. Dr. Robert B. Greenblatt, Augusta, Ga., will present "Recent Advances in Gynecology: Practical Office Diagnosis and Treatment." After discussion of "Recent Advances in Urology: Urology in General Practice" by Dr. Oswald S. Lowsley, New York, the speakers of the day will hold a panel discussion.

New York City

Pharmacy Bicentennial Conference.—"Pharmacy and the Conquest of Disease" will be the theme of the conference organized by the Columbia University College of Pharmacy in honor of the bicentennial of the university and the 125th anniversary of the college of pharmacy. The conference will be held Oct. 14 and 15 in the McMillin Academic Theater at the university. The program will open at 10 a. m. Thursday with presentation of "Chemotherapy in Infectious Diseases" by Henry Welch, Ph.D., Washington, D. C., director, division of antibiotics, U. S. Department of Health, Education, and Welfare, after which Dr. Cornelius P. Rhoads, director, the Sloan-Kettering Institute for Cancer Research, will discuss "Pharmacy's Challenge in the Problem of Cancer" and Dr. William H. Sebrell Jr., Bethesda, Md., director, National Institutes of Health, U. S. Public Health Services, will consider "The Role of Drugs in Nutrition." Dr. Nathan S. Kline, Rockland, will open the Thursday afternoon session with "The Pharmaceutical Approach to Mental Diseases."

Annual Graduate Fortnight.—The New York Academy of Medicine (2 E. 103 St., New York 29) will hold its 27th annual Graduate Fortnight Oct. 18 to 29. Infections and their management will be considered in 20 evening lectures, six morning panel meetings, 10 hospital clinics, and a scientific exhibit. Fees for nonfellows of the academy are $10 for the entire program or $6 for either first or second week. Program and registration card may be obtained from Dr. Robert L. Craig, executive secretary, Committee on Medical Education. On Oct. 18 the opening address, 8:30 p. m., by Dr. Alexander T. Martin, president of the academy, will be followed by the Ludwig Kast lecture, "A Metabolic Approach to the Pathogenesis of Tuberculosis," by Rene J. Dubos, Ph.D., Rockefeller Institute for Medical Research. Dr. J. Burns Amberson, Columbia University College of Physicians and Surgeons, New York, will deliver the Harlow Brooks lecture, "Current Methods in the Treatment of Tuberculosis." On Oct. 19 Dr. Paul R. Cannon, University of Chicago School of Medicine, will deliver the Wesley M. Carpenter lecture, "Alterations in Pathology in Infections Since the Introduction of Chemotherapy and Antibiotics," and Dr. Yale Kneeland Jr., Columbia University College of Physicians and Surgeons, will have as his topic "Acute Nonpurulent Meningitis."

NORTH CAROLINA

Personal.—Dr. Warfield Garson has been appointed chief, venereal disease control section, state board of health, Raleigh. He replaces Dr. Willie G. Simpson, who currently is public health service regional consultant in the Dallas, Texas, office. Dr. Garson came to the state board of health on completion of a year's activity at the Johns Hopkins Hospital, where he worked in chronic disease and venereal disease studies.

Meeting of Chest Physicians.—Dr. Francis M. Woods, Brookline, Mass., will be guest speaker at the fifth annual meeting of the American College of Chest Physicians, North Carolina chapter, in the Robert E. Lee Hotel, Winston-Salem, Oct. 16. At 8 p. m. he will have as his topic "Varied X-Ray Manifestations of Bronchogenic Carcinoma." The afternoon session will begin at 1:30 p. m. A clinical pathological conference by the medical and chirurgical service, Veterans Administration Hospital, Oteen, will follow presentation of "Recent Trends in the Surgery of Tuberculosis" by Dr. James D. Murphy, chief of the surgical service at the hospital. Drs. James T. Marr and Kenneth V. Tyner, Winston-Salem; Dr. Charles D. Thomas, Black Mountain; and Dr. Norman L. Anderson, Asheville, will participate in an x-ray conference. Members and guests are urged to bring chest roentgenograms illustrative of the subjects to be presented or any other chest films presenting diagnostic problems.

OHIO

Society News.—On Oct. 5 the Academy of Medicine of Cincinnati presented a symposium on complications of pregnancy in which Dr. Albert A. Brust, associate professor of medicine, Emory University School of Medicine, Emory University, Ga., discussed medical complications and Dr. Robert A. Garrett, chairman, department of genitourinary surgery, Indiana University Medical Center, Indianapolis, urological complications. The moderator was Dr. Richard D. Bryant, associate professor of obstetrics, University of Cincinnati College of Medicine, Cincinnati.

OREGON

Personal.—Dr. Charles Bradley, associate professor of psychiatry and pediatrics, University of Oregon Medical School, Portland, was recently named a member of the scientific research advisory board of the National Association for Retarded Children.

State Medical Meeting in Portland.—The 80th annual session of the Oregon State Medical Society, with the Sommer memorial lectures and the Oregon Academy of General Practice lectures, will be held at the Masonic Temple, Portland, Oct. 13 to 16, under the presidency of Dr. J. Milton Murphy, Portland. Sommer lecturers and their subjects are:

Clifford J. Barborka, Chicago: Modern Concepts in Peptic Ulcer Problems. Management of Poorly Functioning Gallbladder. Present Status of Nutritional Deficiency States.

John Higginson, Johannesburg, South Africa: Three topics to be announced.

Clarence J. Berne, Los Angeles: Review of Present Status of Adrenal Surgery. Diagnosis and Management of Acute Intestinal Obstruction. Physiological Aspects of Surgical Procedures for Control of Duodenal Ulcer.

Edward L. Compere, Chicago: Diagnosis and Treatment of Primary Bone Tumors. Neck, Shoulder and Arm Syndrome. Etiology, Diagnosis and Treatment of Osteoarthritis of the Hip: Indoprosthesis Arthroplasty.

Dr. Edward G. Billings, Denver, will deliver the Oregon Academy of General Practice lectures: "Capriciousness of Epilepsy," "Cause of Personality Disorders in the Menopause," and "Anxiety and Thyrotoxicosis," and with the Sommer lecturers will participate in a panel discussion at 4 p. m. Friday. Dr. Paul L. Wermer, Secretary, A. M. A. Committee on Research, will address the house of delegates, Oct. 13, 8:30 a. m. Dr. Lewis A. Alesen. Los Angeles, past president, California Medical Association, will be the banquet speaker Friday evening, when he will have as his topic "A Constructive Economic Platform for A. M. A." Dr. Francis T. Hodges, San Francisco, past president, California Academy of General Practice, has been chosen as speaker for the annual dinner of the Oregon Academy of General Practice. Saturday has been designated recreation day: the Oregon medical golf tournament has been scheduled for the morning, and the Oregon-Southern California football game will take place in the afternoon. The woman's auxiliary is holding its meetings concurrently.

PENNSYLVANIA

Pathologists Meet in Philadelphia.—A joint meeting of the Pennsylvania Association of Clinical Pathologists and Middle Eastern Region, College of American Pathologists, will be held at the College of Physicians, 19 S. 22nd St., Philadelphia, Oct. 16. The following program will be presented at 9:30 a. m.:

Cytologic Examinations in the Clinical Laboratory, A. Reynolds Crane, Philadelphia.
Splenectomy in the Hemolytic Anemias, Lawrence H. Beizer, Philadelphia.
Uses and Misuses of Medical Statistics, E. Douglass Burdick, Ph.D., Philadelphia.
A Clinical Pathological Survey of 5,000 Cancers, Elwyn L. Heller, Pittsburgh, and James H. Householder, Braddock.

At 2 p. m. there will be a panel on forensic pathology in which "Paternity Tests" will be discussed by Dr. Neva I. Abelson, Philadelphia; "The Medical Legal Significance of Clinical Tests for Intoxication" by Rolla N. Harger, Ph.D., Indianapolis; and "The Medical Examiner System" by Dr. Russell S. Fisher, Baltimore. There will be a dinner at the Hotel Barclay at 6 p. m.

Lectures on Psychosomatic Medicine.—Lectures on psychosomatic medicine for the general medical profession will be given Thursdays at 4 p. m. under the auspices of the Philadelphia Institute for Education and Research in Psychiatry at the Philadelphia Psychiatric Hospital:

Oct. 14, Stress in Relation to Psychosomatic Medicine, Hans Selye, Montreal, Canada.
Oct. 28, Life Situations, Emotions, and Disease, Harold G. Wolff, New York.
Nov. 11, Psychosomatic Aspects of Obstetrics and Gynecology, William S. Kroger, Chicago.
Dec. 9, Emotional Factors in Physical Disability, Howard A. Rusk, New York.
Jan. 13, 1955, How Should the Nonpsychiatrist Handle the Psychiatric Problems in His Patients, Robert P. Knight, New Haven, Conn.
Feb. 17, The Essence of Psychotherapy, Maurice Levine, Cincinnati.
March 17, Psychiatric Problems in a General Hospital, Grete L. Bibring, Boston.
April 14, An Editor Looks at Psychosomatic Research, Carl A. Binger, New York.

The allied professions, friends, and guests are cordially invited. Information may be had from the Philadelphia Institute for Education and Research in Psychiatry, Ford Road and Monument Avenue, Philadelphia 31.

Philadelphia

University News.—On completion of his internship at Temple University Hospital, Dr. Thomas H. Hindle III was appointed assistant dean of his alma mater, Temple University School of Medicine.——Dr. John Dempsher, associate in biophysics, Johns Hopkins University School of Medicine, Baltimore, has been appointed assistant professor of pharmacology, University of Pennsylvania School of Medicine.

Annual Pemberton Lecture.—The fourth annual Dr. Ralph Pemberton memorial lecture will be given at 2 p. m., Oct. 14, at 301 S. 21st. St. under the sponsorship of the Philadelphia Rheumatism Society and the Eastern Pennsylvania chapter, Arthritis and Rheumatism Foundation. Dr. Philip R. Trommer will serve as moderator for the symposium on low back pain and the panel discussion, in which Drs. Oscar V. Batson, Henry S. Wieder, Morris A. Bowie, Joseph L. Hollander, and Harry E. Banghart will also participate. Dinner at the Philadelphia County Medical Society, 6:30 p. m., is open to the medical profession (subscription: $6). The public is invited to a meeting about "Metabolic Bone Disorders and Their Pathologic Physiology and Relation to Rheumatic Disorders," which will be held at 9 p. m., with Dr. Edward C. Reifenstein Jr., director of biologic and therapeutic research, Schering Corporation, Bloomfield, N. J., as principal speaker.

Pittsburgh

Society News.—At the recent meeting of the Pittsburgh Roentgen Society the following officers were elected: Dr. Peter M. Feltwell Jr., president; Dr. Karl J. Myers, vice-president; Dr. Donald H. Rice, secretary; and Dr. Newton Hornick, treasurer.

Foundation Grant for Library Facilities.—The University of Pittsburgh has received a $500,000 grant from the Maurice and Laura Falk Foundation, Pittsburgh, for library facilities in the new building for the schools of the health professions. The recent gift is in addition to a previous grant of $300,000 provided for a medical school library in 1949 by the foundation. The new 15 million dollar structure, which will house the schools of nursing, dentistry, pharmacy, and medicine, will be located in the heart of the Pitt Medical Center.

Personal.—Dr. Ralph R. Mellon has retired as director of the institute of pathology of Western Pennsylvania Hospital, which he joined in 1927.——Dr. C. Merle Bundy, chief of the bureau of preventive medicine, Pittsburgh Department of Public Health, has been appointed Pittsburgh Works physician for Jones & Laughlin Steel Corporation, to succeed Dr. Carl W. Gatter, who has been made assistant to Dr. Dolor J. Lauer, medical director for special health projects. Before coming to Pittsburgh, Dr. Bundy was director of the tuberculosis control division of the Indiana State Board of Health.

RHODE ISLAND

Cancer Conference.—The seventh annual Cancer Conference for Physicians will be given under the auspices of the Rhode Island Medical Society, Oct. 13, at the Veterans Administration Hospital, Davis Park, Providence. Dr. George W. Waterman, Providence, chairman, cancer committee, Rhode Island Medical Society, will preside over the following program, which will begin at 11 a. m.:

Experimental Cancer Chemotherapy, Murray J. Shear, Ph.D., Bethesda, Md.
Importance of the General Practitioner in Cancer Detection, Leonid S. Snegireff, Boston.
Some Aspects of Malignant Lymphomas, Lloyd F. Craver, New York.
Cancer Detection, Emerson Day, New York.
Tobacco in the Etiology of Lung Cancer, Ernst L. Wynder, New York.
Early Clinical Manifestations of Brain Tumors, Eldridge H. Campbell, Albany, N. Y.

A motion picture at 12 noon will precede luncheon at the hospital.

TENNESSEE

Meeting on Cardiology.—The East Tennessee Heart Association has scheduled the presentation of "Progress Reports in Cardiovascular Diseases" at the Farragut Hotel, Knoxville, Oct. 8 and 9. Dr. George E. Burch, New Orleans, will discuss "Newer Concepts in Pathogenesis, Diagnosis, and Treatment of Congestive Heart Failure" and "Psychogenic Affections of the Heart"; Dr. Emil J. Freireich, Boston, "Blood Volume in Congestive Heart Failure" and "Cardiovascular Manifestations of Anemia, Polycythemia, and Other Hematologic Disorders"; Dr. C. Rollins Hanlon, St. Louis, "The Surgery of Congenital Heart Disease" and "The Surgery of Acquired Heart Disease"; Dr. Irvine H. Page, Cleveland, "Arteriosclerosis"; and Dr. Henry W. Scott Jr., Nashville, "Hypothermia in Cardiac Surgery." There will be a panel discussion and a banquet. There is no registration fee.

TEXAS

Medical Library Dedicated.—The Jesse H. Jones medical library of the Texas Medical Center, Houston, was dedicated Sept. 9. This library, developed by the Houston Academy of Medicine, is housed in a large building that also contains an auditorium and special lounges for the health professions. The dedication address by Chauncey D. Leake, Ph.D., executive director, University of Texas Medical Branch, Galveston, was entitled "Opportunities for a Community Health Library."

Course in Industrial Medicine.—Dr. Valliant C. Baird will be the instructor in charge of a course in industrial medicine at the University of Texas Postgraduate School of Medicine, Houston, Oct. 12 through Nov. 16. The following sessions have been scheduled:

Oct. 12: 1. National Picture and Position of A. M. A. Council. 2. Professional Relationship of Industrial Medicine and the Private Practice of Medicine. 3. Industrial Medicine and Its Relationship to the Practice of Medicine in the State of Texas.
Oct. 19: 1. Industrial Medicine as Practiced in a Large Company Operation. 2. Industrial Medicine as Practiced in a Small Company Operation. 3. Industrial Medicine as Practiced by a Private Practitioner.
Oct. 26: 1. Industrial Hygiene Aspects of an Industrial Medical Program. 2. Cooperation of Public Health Agencies with Industrial Medical Programs. 3. Diagnosis and Detection of Occupational Illness.
Nov. 2: 1. Medicolegal Aspects of Industrial Health Problems and Compensation Laws. 2. Aspects of Handling an Industrial Medical Problem as Viewed by the Insurance Carrier. 3. Medical Rehabilitation Following Injury.
Nov. 9: 1. Industrial Medicine—Its Mental Health Viewpoint: (*a*) alcoholism, (*b*) absenteeism, (*c*) testing. 2. Health Education—Health Promotion: (*a*) media, (*b*) evaluation. 3. Problems of a Special Nature as Experienced in an Industrial Medical Program; Aero Medicine.
Nov. 16: The Specialties View Industrial Medicine: 1. Orthopedics and Surgery Play an Important Part. 2. The Internists in Private Practice and Their Relationship to the Practice of Industrial Medicine. 3. The Field of Psychiatry and How It Relates to Private Practice and Industrial Medicine.

Further inquiry may be made by telephoning the University of Texas Postgraduate School of Medicine (LI-6986).

UTAH

Industrial Hygienists Sponsor Radio-TV Programs.—The Utah section of the Industrial Hygiene Association recently sponsored a series of 10 radio and television programs designed to acquaint the general public with industrial hygiene and occupational medicine. These programs, under the chairmanship of Dr. Preston J. Burnham, Salt Lake City, section director, appeared as part of the regular feature series, "You and Your Health," which is under the direction of Mr. R. L. Servatius for the Utah Health Council. The series opened with presentations on the early history of industrial hygiene and occupational medicine and the history of occupational medicine and its application to the people of Utah. Other programs were devoted to topics such as home and farm hygiene, industrial nursing, and federal and state industrial hygiene programs.

VERMONT

Psychiatric Outpatient Clinic.—A psychiatric outpatient clinic, under the direction of Dr. John L. Smalldon, Brattleboro, instituted Sept. 1, will be held each Wednesday from 2 to 5 p. m. Fees will be charged according to ability to pay. Referrals should be addressed to Milton S. Czatt, Ph.D., Executive Assistant, Brattleboro Retreat, Brattleboro; telephone ALpine 4-2331.

WISCONSIN

Psychosomatic Forum.—The Milwaukee Psychosomatic Forum will present a panel symposium, "Physician-Patient Relationship," Oct. 13, 7:30 p. m., at the Milwaukee Elks Club, with Dr. John S. Hirschboeck, dean, Marquette University School of Medicine, Milwaukee, as moderator and Drs. Merlyn C. F. Lindert, Carl W. Eberbach, Zachary Slomovitz, Samuel B. Black, and Roland A. Jefferson as panelists. All physicians are welcome.

Orthopedic Field Clinics.—The Bureau for Handicapped Children, State Department of Public Instruction, has scheduled the following orthopedic field clinics for October: La Crosse, Oct. 12 to 15; Racine, Oct. 20 and 21; and Sheboygan, Oct. 28 and 29. The clinics are conducted for persons under 21 years of age who come within the state's definition of a crippled child. It is preferred that referral be made by the family physician, but when this is not feasible arrangements may be made by writing to the bureau. Forms for the purpose of referral should be requested from the bureau in advance of the clinic date. Inquiries concerning these clinics may be addressed to the Bureau for Handicapped Children, 146 North, State Capitol, Madison 2.

Lectures in Psychiatry.—The medical staff of St. Joseph Hospital, Milwaukee, offers a course of 10 weekly lectures entitled "Emotional Problems Encountered in Everyday Medical Practice," Wednesday evening from 8 to 9:30 p. m., beginning Oct. 13, with Dr. Christopher J. Buscaglia, Wauwatosa, as chairman. Each session will consist of a one hour lecture followed by a 30 minute question and answer period. One session will be devoted to the demonstration of cases. The following program will be presented:

Oct. 13, Meaning and Diagnosis of a Psychoneurosis, John A. Stemper.
Oct. 20, Acute and Chronic Alcoholism and Addiction to Drugs, Paul J. Lawler.
Oct. 27, Nature of Anxiety, Saul K. Pollack.
Nov. 3, Depressions, John A. Stemper.
Nov. 10, Psychosomatics, Samuel B. Black.
Nov. 17, Physician-Patient Relationships Including Aspects of Long-Term Illness, Roland A. Jefferson.
Nov. 24, Demonstration of Cases to Be Conducted at Milwaukee County Hospital for Mental Diseases, Michael Kasak.
Dec. 1, Panel Discussion, Francis J. Millen, Paul J. Lawler, and Christopher J. Buscaglia.
Dec. 8, Primitive vs. Contemporary Ways of Finding Happiness, William H. Studley.
Dec. 15, to be announced.

Credit for the American Academy of General Practitioners will be arranged. The course is open to physicians of the state of Wisconsin. The registration fee is $20. For information write to Postgraduate Program, St. Joseph Hospital, Milwaukee.

GENERAL

Traveling Scholarships.—Letters of application for the A. Blaine Brower traveling scholarships, which are administered by the American College of Physicians, are due in the executive offices of the college, 4200 Pine St., Philadelphia 4, not later than Oct. 15. The two Brower scholarships, of about $400 each, are awarded to "deserving and promising young physicians, preferably associates of the college, for attendance for a short period of time for observation and study at an outstanding institution of medical teaching, research or practice."

Physicians Flee to Freedom.—More than 900 East German physicians, dentists, nurses, and medical technicians have fled to West Berlin in the past two years, according to the Crusade for Freedom. The Crusade, which sponsors the work of Radio Free Europe and the Free Europe committee, further reports that 500 East German physicians have fled to West Berlin since January, 1953. According to Radio Free Europe, this was admitted by East German health minister Luitpold Steidle, who attributed that satellite's declining health standards to the shortage of qualified personnel. Information previously received by Radio Free Europe revealed that the East German regime had instituted speed-up medical training, in some instances graduating so-called physicians in less than a year.

Fellowships in Hematology.—The Hematology Research Foundation announces the awarding of the Ruth Berger Reader fellowship to Dr. Bracha Ramot and of a second fellowship in hematology to Dr. Sheldon J. Horowitch, both at Michael Reese Hospital in Chicago. Each fellowship is for $1,500. The foundation, which originated in 1943 with a membership of 45 women, now has more than 1,000 members. Grants have been awarded to Cook County, Michael Reese, and Mt. Sinai hospitals, Northwestern University Medical School, Stritch School of Medicine of Loyola University, and University of Illinois College of Medicine in Chicago, and to Lenox Hill Hospital in New York. Fellowships and grants are awarded annually, usually in July, by the medical advisory board. Application forms are available from the foundation's office, 64 W. Randolph St., Chicago 1, in April or May.

Meeting on Fractures.—The American Fracture Association will hold its annual convention at the Shamrock Hotel, Houston, Texas, Oct. 11 to 14, under the presidency of Dr. Henry W. Meyerding, Rochester, Minn. An innovation will be the open discussion on Tuesday, Wednesday, and Thursday of any subject on the previous day's program. Ten round-table luncheon discussions have been scheduled for Monday, 12:15 p. m. On Tuesday, 10:30 a. m., Dr. Alvin H. Diehr, St. Louis, will serve as moderator for a panel discussion, "High Femoral and Intertrochanteric Fractures," and on Wednesday at 10:45 a. m. Dr. F. Wayne Brewster, Holdrege, Neb., will be moderator for a panel discussion, "Fat Embolism and Crush Syndrome." Monday evening there will be a boat trip down the Houston Ship Channel and dinner at the San Jacinto Inn. Tuesday there will be a Texas barbecue at Pecan Acres, Vernon Frost Ranch. A cocktail party at 7 p. m. Wednesday will precede the annual dinner-dance.

Joint Meeting on Ophthalmology and Otolaryngology.—The South Carolina Society of Ophthalmology and Otolaryngology and the North Carolina Eye, Ear, Nose, and Throat Society will hold a joint meeting, Nov. 4 to 6, at the Washington Duke Hotel, Durham, N. C. Guest otolaryngologists will be Dr. Stanton A. Friedberg, Chicago; Dr. James H. Maxwell, Ann Arbor, Mich.; and Dr. George J. Baylin, Durham, N. C. The following guest ophthalmologists will be on the program: Dr. Charles E. Iliff, Baltimore, and Drs. John M. McLean and R. Townley Paton, New York. On Wednesday preceding the beginning of the meeting, operative clinics will be held in the various hospitals of Durham and Chapel Hill, N. C. There will be a football game Saturday afternoon between the University of North Carolina and the University of South Carolina at Chapel Hill.

Supply of Gamma Globulin Now Adequate.—The cooperative program under which the Office of Defense Mobilization has coordinated the distribution of gamma globulin during the past two years will end with 1954. Arthur S. Flemming, director, Office of Defense Mobilization, said on Sept. 30 that, for the balance of this year, commitments that have been made to the state and territorial departments of health will be fulfilled as required for use in measles and in infectious hepatitis and poliomyelitis from the stocks of gamma globulin provided for this purpose by the National Foundation for Infantile Paralysis and the American National Red Cross. According to the report to Mr. Flemming of the Health Resources Advisory Committee and its subcommittee on blood, an increase in supply has taken place during the two year period since the program started to the point that all foreseeable demands can be met. From the start of the program through Sept. 16, 1954, the foundation and Red Cross have contributed in about equal amounts a total of more than 20 million cc. of gamma globulin. Supplies of this material have been distributed as needed to the states and territories by the Public Health Service.

Teaching Institutes at French Lick.—The Association of American Medical Colleges announces that the second in a series of teaching institutes, which it will sponsor Oct. 10 to 15 at the French Lick Springs Hotel, French Lick, Ind., will be on pathology, microbiology, immunology, and genetics. The Coordinators of Cancer Teaching, who meet Oct. 15 and 16, will participate in this institute, which will precede the annual meeting of the association, Oct. 17 to 20. Attendance at the teaching institute will be by invitation only and will be limited to 120 participants. One teacher from each of the 95 medical schools in the United States, Canada, Puerto Rico, and the Philippines has been nominated by the committee and invited by the A. A. M. C., and the total group of participants will represent a balance among the several disciplines that will be explored at the institute. The four basic areas for discussion at the institute are the objectives of teaching, problems of the teacher, interrelationships, and problems of the student.

Clinical and Climatological Association.—The 67th meeting of the American Clinical and Climatological Association will be held at Lake Placid Club, Lake Placid, N. Y., Oct. 14 to 16, under the presidency of Dr. Robert L. Levy, New York. In all, 18 papers will be presented and 14 read by title, 20 invited participants being listed. A cocktail party for members, wives, and guests, followed by dinner and dancing, is scheduled for 6:30 p. m. Thursday. On Friday at 12 noon Dr. Allen O. Whipple, Princeton, N. J., will deliver the Gordon Wilson lecture, "The Circulation of the Spleen in the Living Animal and Its Relation to Certain of the Splenopathies in Man." There will be a visit to Trudeau Sanatorium, Trudeau, N. Y., from 3 to 4:30 p. m. A cocktail party for members and their wives at 6:30 p. m. will be followed by separate dinners for members and for wives. After dinner the ladies are invited to join the members to hear talks by Dr. Theodore L. Badger and Dr. C. Sidney Burwell, both of Boston.

Meeting on Laboratory Law-Enforcement Methods.—During the 69th annual meeting of the Association of Official Agricultural Chemists at the Shoreham Hotel, Washington, D. C., Oct. 11 to 13, several papers will be delivered by members of the Food and Drug Administration on the identification of habit-forming barbiturates, and a rapid and reliable method will be presented for the detection of coumarin, a flavoring substance recently banned from food use in the United States because of its possible toxicity. The featured speaker is Edward Wichers, Ph.D., chief of the chemistry division of the National Bureau of Standards, Washington, D. C., who will talk at the general session Monday, 2 p. m., about "Trends in Analytical Chemistry." At a banquet session Monday evening the honored guest will be Paul B. Dunbar, Ph.D., former commissioner of the Food and Drug Administration. E. L. Griffin, Ph.D., president of the A. O. A. C., will speak at a general scientific session Tuesday, 2 p. m., on recently developed pesticides and regulatory laws affecting their use. All the sessions are open to interested scientific workers and the public. The complete program can be obtained by writing to the Association of Official Agricultural Chemists, Box 540, Benjamin Franklin Station, Washington 4, D. C.

Conference on Occupational Therapy.—At its annual conference, Oct. 16 to 22, at the Shoreham Hotel, Washington, D. C., the American Occupational Therapy Association will have as its general theme "Capitalize Your Assets." Wednesday morning a panel discussion on medical research will be presented by Drs. Hart E. Van Riper, New York (poliomyelitis); Glidden L. Brooks, New York (cerebral palsy); Charles D. Marple, New York (cardiac and rheumatic fever conditions); and Esmond R. Long, Philadelphia (tuberculosis). Dr. Robert L. Leopold, director, functional clinic, Graduate Hospital of the University of Pennsylvania, Philadelphia, will present "Contributing Therapies" at 2 p. m., after which he will moderate a panel, "Integrating Professional Services in Patient Treatment." Thursday morning "Present Day Problems in Industrial Medicine" will be discussed by Dr. Anthony J. Lanza, director, department of industrial medicine, institute of industrial medicine, Postgraduate Medical School of the New York University-Bellevue Medical Center, New York, and "Treatment Methods Following Hand Surgery" by Dr. Raymond M. Curtis, consultant in hand surgery, Baltimore City Hospitals, U. S. Public Health Service Hospital, Baltimore, Md., and Veterans Administration Hospital, Fort Howard, Md. The sectional meeting on tuberculosis will hear "Modern Concepts of Tuberculosis" explained by Dr. Moe Weiss, chief, medical services, Glenn Dale Hospital, Glenn Dale, Md., and "Developments in Drugs and Surgery in Tuberculosis" by Dr. Howard M. Payne, professor in medicine, Howard University College of Medicine, Washington, D. C. Other topics to be considered include rehabilitation of the blind, physiology of speech, and problems of hearing impairment. Friday morning, "Techniques of Group Instruction" will be outlined by Capt. John Ey, M.S.C., special projects branch, personal division, Office of the Surgeon General, Department of the Army. The final presentation, "Serving the Needs of the Crippled Child," will be made by Harry V. Bice, Ph.D., consultant in psychology, Bureau of Crippled Children's Commission, Trenton, N. J.

Society News.—At its annual meeting the **American Gynecological Society** elected the following officers: Dr. Philip F. Williams, Bala-Cynwood, Pa., president; Dr. Newell W. Philpott, Montreal, Canada, first vice-president; Dr. Thomas C. Peightal, New York, second vice-president; Dr. John I. Brewer, Chicago, secretary; and Dr. John Parks, Washington, D. C., treasurer. The 1955 annual meeting will be held at the Chateau Frontenac, Quebec, Canada, May 23 to 25.——The **Society of Neurological Surgeons** recently elected Dr. W. James Gardner, Cleveland, president; Dr. Edgar F. Fincher, Emory University, Ga., vice-president; Dr. Bronson S. Ray, New York, secretary-treasurer; and Dr. A. Earl Walker, Baltimore, historian.——Newly elected officers of the **Western Society of Electroencephalography** include Dr. John R. Green, Phoenix, Ariz., president; Dr. Arthur A. Ward Jr., Seattle, vice-president; and Dr. Sylvester N. Berens, Seattle, secretary-treasurer.——Newly elected officers of the **American Association of Immunologists** include Dr. Alwin M. Pappenheimer Jr., New York, president; Dr. Jules T. Freund, New York, vice-president; and Dr. Francis S. Cheever, Pittsburgh, secretary-treasurer.——The **American Federation for Clinical Research** has announced the following deadlines for abstracts: (1) abstracts for the meeting of the eastern section, which will be held Dec. 3 and 4, must be sent before Oct. 12 to Dr. Laurence H. Kyle, Georgetown University Hospital, Washington 7, D. C.; (2) abstracts for the meeting of the western section, Jan. 27, 1955, must be sent before Nov. 15 to Dr. Harold Brown, Veterans Administration Hospital, 12th and E Streets, Salt Lake City; and (3) abstracts for the southern section meeting, Jan. 28, must be sent before Nov. 15 to Dr. John L. Patterson Jr., Medical College of Virginia, Richmond 19.——The Midwest regional meeting of the **American College of Physicians** will be held at the Claypool Hotel, Indianapolis, Oct. 9. In all, 32 invited speakers will participate with member speakers in the program. The session will end with a clinical pathological conference at 4:25 p. m. for which Dr. James O. Ritchey, Indianapolis, will serve as moderator, with Drs. Frank Forry, Indianapolis; Karver L. Puestow, Madison, Wis.; and Joseph B. Kirsner, Chicago, as participants. Dr. Puestow will be one of the honored guests at the dinner, 7 p. m., following a social hour and cocktails, the others being Drs. Cyrus C. Sturgis, Ann Arbor, Mich.; Philip S. Hench, Rochester, Minn.; Walter L. Palmer, Chicago; and Mr. Edward R. Loveland, Philadelphia.

Public Health Meetings.—The 82nd annual meeting of the American Public Health Association and meetings of 38 related organizations will be held in Buffalo, Oct. 11 to 15, under the presidency of Dr. Hugh R. Leavell, Boston. In all, 400 speakers will contribute to the 75 scientific sessions. The registration fee is $5. The Conference of Professors of Preventive Medicine will meet Sunday in Capen Hall, University of Buffalo campus, for an all-day institute on the teaching of epidemiology to medical students. Dr. R. Percy Vivian, Montreal, Canada, will deliver the keynote address, and Drs. Thomas Francis Jr., Ann Arbor, Mich.; John R. Paul, New Haven, Conn.; and Jacques M. May, New York, will participate in the morning session.

The Monday morning session of the American School Health Association will be devoted to health education through radio and television. The Association of Business Management in Public Health will have a panel discussion Monday morning, followed by "New Horizons in Public Health for Nonmedical Personnel" by Dr. John D. Porterfield III, Columbus, Ohio. The Public Health Cancer Association will present a progress report on lung cancer, with a panel discussion moderated by Dr. Morton L. Levin, Albany, N. Y. Dr. M. G. Candau, Geneva, Switzerland, director-general, World Health Organization, will address a public luncheon of the National Citizens Committee for the World Health Organization Monday noon, when his topic will be "The World Health Organization's Top Priorities." In the afternoon Dr. Ivan H. Smith, London, Ontario, Canada, will report on current experience with cobalt in cancer therapy and Dr. Charles S. Cameron, New York, on the program of the American Cancer Society. Monday at 5 p. m. there will be a reception for the president of the American Public Health Association. At 6:30 p. m. Dr. Orren D. Chapman, Syracuse, N. Y., will be the dinner speaker for the Conference of State and Provincial Public Health Laboratory Directors. The American School Health Association, meeting at 8 p. m. Monday, will hear Dr. Austin E. Hill, Houston, Texas, speak on the nutritional needs of school children, after which there will be a panel discussion on the Education Policies Commission report on school athletics, followed by presentation of "Mental Health—Keystone of Education" by Dr. Dana L. Farnsworth, Cambridge, Mass.

The Tuesday morning session of the epidemiology and laboratory sections will be devoted to discussion of new advances in viral and rickettsial diseases. Program evaluation will be discussed Tuesday at 2:30 p. m. by the dental health, food and nutrition, health officers, public health education, public health nursing, school health, and statistics sections. The first general session of the association is scheduled for Tuesday at 8:30 p. m. and the second general session for Thursday, 8:30 p. m. The association symposium, "The Impact of Suburbanization on Public Health," will hold its first session Wednesday, 2:30 p. m., and its second session Friday at the same time.

Dr. W. W. Bauer, Director of the A. M. A. Bureau of Health Education, will be the speaker at the dinner session of the American School Health Association Wednesday, 6:30 p. m. At the joint session of the epidemiology and laboratory sections Thursday morning active immunization will be discussed; at the joint session of the epidemiology, maternal and child health, and public health nursing sections, childhood accident prevention will be the topic of discussion. There will be a panel discussion on Escherichia coli diarrhea in infants Thursday afternoon before the engineering, epidemiology, food and nutrition, and laboratory sections. Thursday at 2:30 p. m. the medical care section will have a panel discussion, "Comprehensive Medical Care: Next Steps." The division of international health, U. S. Public Health Service, has scheduled an international health round-up breakfast Friday, 8 a. m., for all who have done health work of any kind abroad.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States and its territories and possessions in the weeks ended as indicated:

	Sept. 11, 1954		
Area	Paralytic Type	Total Cases Reported	Sept. 12, 1953, Total
New England States			
Maine	2	5	31
New Hampshire	..	1	9
Vermont	3	6	11
Massachusetts	16	83	32
Rhode Island	..	12	32
Connecticut	5	23	18
Middle Atlantic States			
New York	30	122	182
New Jersey	31	57	41
Pennsylvania	..	104	102
East North Central States			
Ohio	38	137	183
Indiana	15	47	85
Illinois	63	148	113
Michigan	43	115	147
Wisconsin	4	17	45
West North Central States			
Minnesota	19	38	192
Iowa	33	101	32
Missouri	30	51	42
North Dakota	5	13	14
South Dakota	..	5	38
Nebraska	34	88	16
Kansas	13	56	33
South Atlantic States			
Delaware	..	..	3
Maryland	8	15	42
District of Columbia	3	4	5
[illegible]	21	44	45
[illegible]	18	42	30
[illegible]	14	37	31
[illegible]	6	13	11
Georgia	27	56	22
Florida	8	33	48
East South Central States			
Kentucky	44	82	17
Tennessee	3	34	21
Alabama	11	19	23
Mississippi	4	13	20
West South Central States			
Arkansas	13	16	16
Louisiana	13	19	16
Oklahoma	7	29	29
Texas	50	131	47
Mountain States			
Montana	4	7	14
Idaho	..	11	4
Wyoming	1	20	4
Colorado	11	24	19
New Mexico	4	17	4
Arizona	2	9	22
Utah	..	1	5
Nevada	..	5	2
Pacific States			
Washington	13	25	28
Oregon	18	27	22
California	85	159	160
Territories and Possessions			
Alaska	4	11	2
Hawaii	..	..	..
Puerto Rico	..	..	2
Total	779	2,132	2,115

CANADA

Symposium on Metabolism.—At its 18th annual meeting. Oct. 22 and 23 at the Royal York Hotel, Toronto, the Canadian Physiological Society will present a symposium. "The Role of Electrolytes in Metabolism." Saturday afternoon. Open house will be held at the University of Toronto for visiting the laboratories. The annual dinner is scheduled for Saturday evening.

PHILIPPINE ISLANDS

Medical Association Moves.—The Philippine Medical Association has moved to a new address: P. M. A. House, 914 Taft Ave.. Manila. The new headquarters house the offices of the association and its journal as well as its library and the office of the secretary of the Philippine Medical Center, Inc.

Award to Dr. Sison.—The Philippine Medical Association recently cited for its first distinguished service award for 1954 Dr. Antonio G. Sison, Manila. "For outstanding services to the Philippine Medical Association wherein he served for two terms as its President; For unstinted devotion as chairman of the Committee on Medical Education, Hospitals and Laboratories of the Philippine Medical Association, under whose sponsorship postgraduate courses were created by passage of Commonwealth Act No. 401. and standards of medical education in the Philippines have ever been jealously safeguarded, culminating in the lengthening of the pre-medical course from two to three years; For his honest exposition of the principles of medical ethics as associate editor of the *Bulletin of the Manila Medical Society* and then later of the *Journal of the Philippine Medical Association* which was founded during his incumbency as president."

DEATHS IN OTHER COUNTRIES

Dr. Saturnino Guzman-Cervera of Merida. Yucatan, Mexico, a graduate of the University of Paris Faculty of Medicine, 1886, died Aug. 18 at the age of 97. He had served for over 50 years as professor of clinical surgery and head of the department of surgery at the University of Yucatan School of Medicine. He was a diplomate of the Mexican Academy of Surgery, chief of Surgical Unit No. 1 at O'Horan General Hospital in Merida, and lately consulting surgeon.

CORRECTION

Approved Residencies and Fellowships.—In the Internship and Residency Number of THE JOURNAL, Sept. 25, 1954, in the listing of nonfederal hospitals under Dermatology and Syphilology, page 356, there should have been no numerical listing for the Jefferson Davis Hospital, Houston, Texas, under the heading Inpatients Treated.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1954 Clinical Meeting, Miami Florida, Nov. 29-Dec. 2.
1955 Annual Meeting, Atlantic City, N. J., June 6-10.
1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.
1956 Annual Meeting, Chicago, June 11-15.
1956 Clinical Meeting, Seattle, Nov. 27-30.

National Medical Public Relations Conference, McAllister Hotel, Miami, Fla , Nov 28 Mr. Leo F Brown, 535 North Dearborn St., Chicago 10, Director.

American Academy for Cerebral Palsy, Williamsburg Inn, Williamsburg, Va , Nov 4-6. Dr. Harry E Barnett, 116 South Michigan Blvd , Chicago 3, Secretary.

American Academy of Dermatology and Syphilology, Palmer House, Chicago, Dec. 4-9 Dr. J. E Rauschkolb, P. O. Box 6565, Cleveland 1, Secretary

American Association of Medical Clinics, Jung Hotel, New Orleans, Nov. 12-14 Dr. Arthur H. Griep, 420 Cherry St., Evansville, Ind , Secretary.

American Association for the Surgery of Trauma, Hotel Claridge, Atlantic City, N. J., Nov. 11-13. Dr James K. Stack, 700 North Michigan Blvd , Chicago 11, Secretary

American Cancer Society, Hotel Roosevelt, New York, Oct. 17-24. Dr. Charles S. Cameron, 47 Beaver St., New York 4, Medical Director.

American Clinical and Climatological Association, Lake Placid Club, Lake Placid, N Y., Oct. 14-16. Dr. Marshall N. Fulton, 124 Waterman St., Providence 6, R. I., Secretary.

American College of Cardiology, Interim Meeting, Algiers Hotel, Miami Beach, Florida, Nov. 11-13. Dr. Philip Reichert, 140 West 57th St., New York 19, Secretary.

American College of Gastroenterology, The Shoreham, Washington, D. C., Oct. 25-30. Dr. A. Xerxes Rossien, 33 West 60th St., New York 23, Secretary.

American College of Surgeons, Convention Hall, Atlantic City, N. J., Nov. 14-19. Dr. Michael L. Mason, 40 East Erie St., Chicago 11, Secretary.

American Dental Association, Miami, Fla , Nov. 8-11. Dr. Harold Hillenbrand, 222 East Superior St , Chicago 11, General Secretary.

American Fracture Association, Shamrock Hotel, Houston, Texas, Oct. 11-14. Dr. H. W. Wellmerling, 626 Griesheim Bldg , Bloomington, Ill , Secretary-General

American Public Health Association, Memorial Auditorium, Buffalo, N. Y., Oct. 11-15. Dr. Reginald M. Atwater, 1790 Broadway, New York 19, Executive Secretary.

American Society of Anesthesiologists, Netherland-Plaza Hotel, Cincinnati, Oct. 25-30 Dr. J. Earl Remlinger Jr., 188 West Randolph St , Chicago 1, Secretary.

American Society for the Study of Arteriosclerosis, Sheraton Hotel, Chicago, Oct. 31-Nov. 1. Dr. O J. Pollak, P. O. Box 228, Dover, Del , Secretary.

American Society of Tropical Medicine and Hygiene, Hotel Peabody, Memphis, Tenn., Nov. 4-6. Dr. John E. Larsh Jr., Dept. of Parasitology, School of Public Health, Univ. of North Carolina, Chapel Hill, N. C , Secretary.

American Therapeutic Society, The Chase Hotel, St. Louis, Nov. 4-7. Dr. Oscar B. Hunter, 915 Nineteenth St. N. W., Washington, D. C , Secretary.

Association of American Medical Colleges, French Lick Springs Hotel, French Lick, Ind., Oct. 17-20. Dr. Dean F. Smiley, 185 N Wabash Ave., Chicago 1, Secretary.

Association of Life Insurance Medical Directors of America, Royal York Hotel, Toronto, Canada, Oct. 12-14. Dr. Henry B. Kirkland, P. O. Box 594, Newark, N. J., Secretary.

Association of Military Surgeons of the United States, Hotel Statler, Washington, D. C , Nov. 29-Dec. 1. Dr. Robert E. Bitner, Armed Forces Institute of Pathology, Washington 25, D. C., Secretary.

California Academy of General Practice, Statler Hotel, Los Angeles, Oct. 24-27. Mr. Wm. W. Rogers, 461 Market St., San Francisco 5, Executive Secretary.

Central Society for Clinical Research, Drake Hotel, Chicago, Oct. 29-30. Dr. Robert H. Ebert, 950 East 59th St., Chicago 37, Secretary.

Congress of Neurological Surgeons, The Waldorf-Astoria, New York, Nov. 4-6. Dr. Bland W. Cannon, 1092 Madison Ave., Memphis, Tenn., Secretary.

Delaware, Medical Society of, Dover, Oct. 11-13. Dr. Norman L. Cannon, 1208 Delaware Ave., Wilmington, Executive Secretary.

District of Columbia, Medical Society of the, Hotel Shoreham, Washington, D. C., Nov. 1-3. Mr. Theodore Wiprud, 1718 M St. N. W., Washington, D. C., Secretary.

Gulf Coast Clinical Society, Edgewater Park, Miss , Oct. 21-22. Dr. F. C. Minkler, Pascagoula, Miss , Secretary.

Indiana State Medical Association, Murat Temple, Indianapolis, Oct. 26-28. Mr. James A. Waggener, 23 East Ohio St., Indianapolis 4, Executive Secretary.

Interstate Post Graduate Medical Asssociation of North America, Municipal Auditorium, Minneapolis, Nov. 1-4. Dr. Erwin R. Schmidt, 1300 University Ave., Madison 6, Wis , Secretary.

Inter-Society Cytology Council, Statler Hotel, Boston, Nov. 12-13. Dr. John B. Graham, 32 Fruit St., Boston, Chairman, Program Committee.

Midwestern Section of American Federation for Clinical Research, Thorne Hall Auditorium, Northwestern University Medical Campus, Chicago, Oct. 28. Dr. R. L. Grissom, Univ. of Nebraska College of Medicine, Dept. of Internal Medicine, Omaha 5, Secretary.

National Association for Mental Health, Hotel Statler, New York, Oct 23-25. Mr. Robert M. Heininger, 1790 Broadway, New York 19, Executive Director.

National Rehabilitation Association, Baltimore, Oct. 24-27. Mr. E. B. Whitten, 514-16 Arlington Bldg , 1025 Vermont Ave., N.W., Washington, D. C., Executive Director.

National Society for Crippled Children and Adults, Statler Hotel, Boston, Nov. 3-5 Mr. Lawrence J. Linck, 11 South LaSalle St , Chicago 3, Executive Director.

Oklahoma City Clinical Society Conference, Oklahoma City, Oct 25-28. Dr. Charles E Leonard, 512 Medical Arts Bldg., Oklahoma City 2, Secretary.

Omaha Mid-West Clinical Society, Paxton Hotel, Omaha, Oct. 25-28. Dr. Louis E. Moon, 1031 Medical Arts Bldg , Omaha 2, Secretary.

Oregon State Medical Society, Heathman Hotel, Portland, Oct. 13-16. Dr. Charles E Littlehales, 1115 S. W. Taylor St., Portland 5, Executive Secretary.

Pennsylvania, Medical Society of the State of, Bellevue-Stratford Hotel, Philadelphia, Oct. 17-22. Dr. Harold B. Gardner, 230 State St., Harrisburg, Secretary.

Post-Graduate Clinic, Michigan Academy of General Practice, Sheraton-Cadillac Hotel, Detroit, Nov. 10-11. Dr. F. P. Rhoades, 970 Maccabees Bldg., Detroit 2, Chairman.

Regional Meetings, American College of Physicians:

- Michigan, Grand Rapids, Dec. 4, Dr. H. Marvin Pollard, 1313 East Ann St., Ann Arbor, Governor.
- New England, Hartford, Conn., Oct. 22. Dr. John C. Leonard, 80 Seymour St., Hartford, Conn., Chairman.
- New Jersey, Newark, Nov. 3. Dr. Edward C. Klein Jr., 6 South Kingman Rd., South Orange, N. J., Governor.
- Southeastern, Edgewater Gulf Hotel, Edgewater Park, Miss., Oct. 15-16. Dr. E. Dice Lineberry, 1529 N. 25th St., Birmingham 4, Ala., Governor.
- Western New York, Syracuse, Nov. 19. Dr. Edward C. Reifenstein, 109 South Warren St., Syracuse 2, Governor.
- Western Pennsylvania, Pittsburgh, Oct. 27. Dr. Roy R. Snowden, 3509 Fifth Ave., Pittsburgh 13, Chairman.

Southern Medical Association, St. Louis, Nov. 8-11. Mr. C. P. Loranz, 1020 Empire Bldg., Birmingham 3, Ala., Secretary.

Southern Society of Cancer Cytology, St. Louis, Nov. 8-11. Dr. J. Ernest Ayre, 1155 N.W. 14th St., Miami, Fla., Secretary.

Southwestern Medical Association, Hotel Paso del Norte, El Paso, Texas, Nov. 17-19. Dr. Celso C. Stapp, 800 Montana St., El Paso, Texas, Secretary.

Virginia, Medical Society of, Shoreham Hotel, Washington, D. C., Oct. 31-Nov. 3. Mr. Robert I. Howard, 1105 W. Franklin St., Richmond, Executive Secretary.

Western Surgical Association, The Broadmoor, Colorado Springs, Colo., Dec. 2-4. Dr. Michael L. Mason, 154 East Erie St., Chicago 11, Secretary.

FOREIGN AND INTERNATIONAL

Commonwealth Health and Tuberculosis Conference, Royal Festival Hall, London, England, June 21-25, 1955. Mr. J. H. Harley Williams, Tavistock House North, Tavistock Square, London, W.C.1, England, Secretary General.

Conference of the Solvay Institute of Sociology, Universiti Libre de Bruxelles, Brussels, Belgium, Oct. 18-23, 1954. For information write: Assistant to the Secretary, A. Dorsinfang Smets, Solvay Institute of Sociology, Parc Leopold, Brussels 4, Belgium.

Congress of International Association of Applied Psychology, London, England, July 18-23, 1955. Dr. C. B. Frisby, National Institute of Industrial Psychology, 14 Welbeck St., London, W.1, England, President.

Congress of the International Diabetes Federation, Cambridge, England, July 4-8, 1955. Mr. James G. L. Jackson, 152 Harley St., London, W.1, England, Executive Secretary General.

European Congress on Rheumatism, Scheveningen, The Hague, Netherlands, June 13-17, 1955. Dr. H. van Swaay, Pieter Bothstraat 12, The Hague, Netherlands, Secretary.

Health Congress of the Royal Sanitary Institute, Bournemouth, England, April 26-29, 1955. Mr. P. Arthur Wells, Royal Sanitary Institute, 90 Buckingham Palace Road, London, S.W.1, England, Secretary.

Inter-American Congress of Radiology, Shoreham Hotel, Washington, D. C., U. S. A , April 24-29, 1955. Dr. Eugene P. Pendergrass, 3400 Spruce St., Philadelphia 4, Pa., U. S. A., Secretary-General.

Inter-American Session, American College of Surgeons, Universidad Mayor de San Marcos de Lima, Lima, Peru, S. A., Jan. 11-14, 1955. Dr. Michael L. Mason, 40 East Erie St., Chicago 11, Ill., U. S. A., Secretary.

International Anatomical Congress, Paris, France, July 25-30, 1955. Prof. Gaston Cordier, 45, rue des Saints-Pères, Paris 6^e^, France, Secretary-General.

International Anesthesia Research Society, Ambassador Hotel, Los Angeles, Calif., U. S. A., Oct. 10-14, 1954. *For information write:* Dr. T. H. Seldon, 102-110 Second Avenue S. W., Rochester, Minn., U. S. A.

International Congress of Biochemistry, Brussels, Belgium, Aug. 1-6, 1955. Prof. C. Liebecq, 17 Place Delcour, Liege, Belgium, Secretary-General.

International Congress of Comparative Pathology, Lausanne, Switzerland, May 26-31, 1955. Professor Hauduroy, 19 rue Cesar Roux, Lausanne, Switzerland, Secretary-General.

International Congress of Criminology, London, England, Sept. 4-10, 1955. For information write: Dr. Carroll, 28 Weymouth St., London, W.1, England.

International Congress of Military Medicine and Pharmacy, Luxemburg, Luxemburg, Nov. 7-12, 1954. Colonel A. R. Vernengo, Direccion General de Sanidad Militar, Pozos 2045, Buenos Aires, Argentina, S. A., Secretary-General.

International Congress of Plastic Surgery, Stockholm, Sweden, Aug. 1-4, 1955, and Uppsala, Sweden, Aug. 5, 1955. Dr. Tord Skoog, Uppsala, Sweden, General Secretary.

International Hospital Congress, Lucerne, Switzerland, May 30-June 3, 1955. Capt. J. E. Stone, International Hospital Federation, 10 Old Jewry, London, E.C.2, England, Hon. Secretary.

International Surgical Congress, Geneva, Switzerland, May 23-26, 1955. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary-General.

Japan Medical Congress, Kyoto University and Kyoto Prefectural Medical College, Kyoto, Japan, April 1-5, 1955. Dr. Mitsuharu Goto, University Hospital, Medical Faculty of Kyoto University, Kyoto, Japan, Secretary-General.

Latin American Congress of Physical Medicine, Lima, Peru, S. A., Feb. 14-19, 1955. Dr. Cassius Lopez de Victoria, 176 East 71st St., New York 21, N Y., U. S. A., Executive Director.

Neuroradiologic Symposium, London, England, Sept. 13-17, 1955. Dr. R. D. Hoare, National Hospital, Queen Square, London, W.C.1, England, Secretary.

Pan-American Academy of General Practice, Lima, Peru, S. A., Feb. 11-25, 1955. Dr. Arturo Martinez, 54 East 72nd St., New York 21, N. Y., U. S. A., Secretary.

Pan American Homeopathic Medical Congress, Hotel Gloria, Rio de Janeiro, Brazil, S. A., Oct. 2-13, 1954. Dr. Paul S. Schantz, 103 West Main St., Ephrata, Pa., U. S. A., Executive Secretary.

EXAMINATIONS AND LICENSURE

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: *Written.* July 15. Final date for *filing applications* is Jan. 15. *Oral.* Colorado Springs, March 27-31. New York City, Oct. 23-27. Sec., Dr. Curtiss B. Hickcox, 80 Seymour St., Hartford 15.

American Board of Dermatology and Syphilology: *Oral.* Ann Arbor, Oct. 15-18. To be eligible candidates must have completed thirty-six months of training by October 1. Final date for filing application was May 1. Exec. Sec., Miss Janet Newkirk, 129 E. 52nd St., New York 22.

American Board of Internal Medicine: *Written.* Oct. 17, 1955. Major centers throughout the United States, the European Command, and the *Far East Command. Final date for filing applications is May 1. Oral.* New Orleans, Feb. 1-4; Philadelphia, May 4-5; Washington, D. C., May 6-7; Portland, Ore., Sept. 14-16; Chicago, Nov. 30-Dec. 1. Exec. Sec., Dr. William A. Werrell, One West Main St., Madison 3, Wis.

American Board of Neurological Surgery: *Oral.* New Haven, November. Final date for filing application is November 1. Sec., Dr. Leonard T. Furlow, 600 S. Kingshighway, St. Louis 10.

American Board of Obstetrics and Gynecology: *Part I.* Various centers, Feb 4. *Part II*, Chicago, May 12-20. Deadline for receipt of applica*tions is October 1. Sec.*, Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6.

American Board of Ophthalmology: *Practical examinations, 1954.* New York City, Dec. 5-9. Final date for filing applications was July 1, 1953. *Written, 1955.* Various cities, Jan. 24-25. Final date for filing application was July 1, 1954. *Practical examinations, 1955.* Philadelphia, June 10-15, Chicago, Oct. 9-14. Sec., Dr. Edwin B. Dunphy, 56 Ivie Road, Cape Cottage, Maine.

American Board of Orthopedic Surgery: *Part I.* Various locations, spring. *Part II, Oral and Written.* Los Angeles. Jan. 26-28. Final date for filing applications for Part II was Aug. 15. Sec., Dr. Harold A. Sofield, 122 South Michigan Ave., Chicago 3, Illinois.

American Board of Otolaryngology: Richmond, Va., March 6-10, 1955. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City.

American Board of Pathology: Miami, Nov. 29-30-Dec. 1. Sec., Dr. William B. Wartman, 303 E. Chicago Ave., Chicago 11.

American Board of Pediatrics: *Oral.* Chicago, Oct. 8-10 and New Haven, Dec. 3-5. Ex. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

American Board of Plastic Surgery: Atlanta, Ga., Oct. 20-22. Final date for filing case reports was June 1. Final date for filing case reports for spring 1955 examination is Jan. 1. Corres. Sec., Miss Estelle E. Hillerich, 4647 Pershing Ave., St. Louis 8.

American Board of Preventive Medicine: *Parts I and II.* Buffalo, Oct. 9-11. Final date for filing applications was July 15. Sec., Dr. Ernest L. Stebbins, 615 N. Wolfe St., Baltimore.

American Board of Psychiatry and Neurology: New York, Dec. 13-14; New Orleans, Feb. 28-March 1, 1955; San Francisco, mid-October, 1955; New York City, December, 1955. Sec., Dr. David A. Boyd, 102-110 Second Ave. S.W., Rochester, Minnesota.

American Board of Surgery: *Part I.* Oct. 26; March 30. *Part II.* Chicago, Oct. 18; New York City, Nov. 11-12; Kansas City, Kansas, Dec. 13-14; New Orleans, Jan. 17-18; Baltimore, Feb. 14-15; Cincinnati, March 14-15; San Francisco, April 18-19; Boston. May 16-17; Philadelphia, June 13-14. Sec., Dr. John B. Flick, 225 S. Fifteenth St., Philadelphia 2.

The Board of Thoracic Surgery: *Written.* February. Final date for filing applications is Jan. 1. Sec., Dr. Wm. M. Tuttle, 1151 Taylor Ave., Detroit 2.

DEATHS

Hadley, Ernest Elvin ⊕ Washington, D. C.; born in Alton, Kan., Aug. 2, 1894; University of Kansas School of Medicine, Kansas City, 1920; fellow of the American College of Physicians; member of the Southern Psychiatric Association, the American Psychiatric Association, and the American Psychoanalytic Association and at one time secretary of its board on professional standards; president of the Washington Psychoanalytic Society; director of the Washington Psychoanalytic Institute and consultant to the Corporate Foundation for Research and Training in Psychiatry; organized the William Alanson White Psychiatric Foundation and formerly was its trustee and secretary; from 1936 to 1943 director of the Washington School of Psychiatry; awarded the Selective Service medal by President Truman for his work as chairman of the psychiatry panel of the Army Induction Board at Fort Myer from 1942 to 1944; formerly chairman of the publications committee of *Psychiatry: Journal of the Biology and the Pathology of Interpersonal Relations;* affiliated with the Doctors Hospital, where he died Aug. 10, aged 59, of coronary occlusion.

Jacobs, Charles Mayo ⊕ Chicago; Northwestern University Medical School, Chicago, 1894; an Associate Fellow of the American Medical Association; specialist certified by the American Board of Orthopaedic Surgery; member of the American Orthopaedic Association, Clinical Orthopaedic Association, and the American Academy of Orthopaedic Surgeons; formerly on the faculty of Rush Medical College and his alma mater; served on the staffs of the Michael Reese Hospital, Cook County Hospital, and Mount Sinai Hospital, where he died Sept. 11, aged 82, of coronary occlusion.

Adelman, Ernest Bernard, Island Park, L. I., N. Y.; Middlesex College of Medicine and Surgery, Cambridge, Mass., 1920; died in the Long Beach (N. Y.) Memorial Hospital Aug. 16, aged 57.

Allen, Fredrick Ward Jr. ⊕ San Diego, Calif.; University of Illinois College of Medicine, Chicago, 1944; a lieutenant (jg) in the medical corps of the U. S. Naval Reserve during World War II and served an internship at the U. S. Naval Hospital; while in general practice at Silver City, N. Mex., served a term as president of the Grant County Medical Society; recalled to active duty in November, 1952; retired in March of this year due to illness; died Aug. 10, aged 34, of acute myelogenous leukemia.

Alpern, Charles ⊕ Chicago; University of Illinois College of Medicine, Chicago, 1946; served during World War II; died in the Mount Sinai Hospital Sept. 3, aged 31, of hypertensive heart disease and nephrosclerosis.

Bennett, Floyd William, St. Louis; St. Louis University School of Medicine, 1905; died in the Baptist Hospital, Springfield, Mo., Aug. 19, aged 72, of cerebral hemorrhage and arteriosclerosis.

Berg, William Howard, Villas, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1909; veteran of the Spanish-American War; died Aug. 14, aged 78, of hypertensive cardiovascular disease.

Bragdon, George Herbert ⊕ Reeds, Mo.; Gate City Medical College, Texarkana, Ark., 1906; served overseas during World War I; formerly mayor of Reeds; also a druggist; past president of the school board; on the staff of the McCune-Brooks Hospital in Carthage; died July 5, aged 78, of chronic myocarditis.

Bretz, Waverly Daniel ⊕ Huntingburg, Ind.; Western Reserve University Medical Department, Cleveland, 1909; died in Stork Hospital May 21, aged 71, of cerebral hemorrhage and arteriosclerosis.

Broadhurst, William Shuler, Imperial, Pa.; University of Pittsburgh School of Medicine, 1908; died Aug. 3, aged 69, of coronary occlusion.

Brown, Herbert Rutherford ⊕ Rochester, N. Y.; Harvard Medical School, Boston, 1914; specialist certified by the American Board of Pathology; member of the American Society of Clinical Pathologists; affiliated with the Park Avenue Hospital; died in the Highland Hospital Aug. 17, aged 76, of arteriosclerosis and pulmonary tuberculosis.

Brown, Ralph Crissman ⊕ Chicago; Rush Medical College, Chicago, 1904; specialist certified by the American Board of Internal Medicine; member of the Central Society for Clinical Research and the American Gastro-Enterological Association, of which he was past president; professor of medicine (Rush) emeritus, University of Illinois College of Medicine; served overseas during World War I; consultant in medicine at the Presbyterian Hospital; died in Boston Aug. 31, aged 76.

Buck, Clifton Leon, Danvers, Mass.; Tufts College Medical School, Boston, 1911; affiliated with the Hunt Memorial Hospital and Beverly (Mass.) Hospital; died July 22, aged 72, of acute coronary insufficiency.

Cammarano, Carmelo, Ozone Park, N. Y.; University of Louisville (Ky.) School of Medicine, 1924; died June 17, aged 54, of peritonitis and perforation of the small intestine.

Coffey, John C., Hedley, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1901; died in Wichita Falls recently, aged 87, of arteriosclerosis.

Cohn, Nathan ⊕ New York City; University and Bellevue Hospital Medical College, New York, 1924; associate clinical professor of medicine at the New York Medical College, Flower and Fifth Avenue Hospitals; fellow of the American College of Chest Physicians; attending physician at the Morrisania Hospital and adjunct in medicine at Bronx Hospital, where he died July 6, aged 53, of carcinoma of the kidney.

Crumrine, Henry Charles ⊕ Los Angeles; University of Wooster Medical Department, Cleveland, 1900; died in Pasadena recently, aged 77, of myelogenous leukemia and arteriosclerotic heart disease.

Dingman, John Henry ⊕ Poughkeepsie, N. Y.; Albany (N. Y.) Medical College, 1901; fellow of the American College of Surgeons; affiliated with Northern Dutchess Health Service Center in Rhinebeck, St. Francis Hospital, Vassar Brothers Hospital, and Hudson River State Hospital; died Aug. 9, aged 81, of carcinoma of the pancreas.

Douglas, Smith Walker ⊕ Eudora, Ark.; College of Physicians and Surgeons, Little Rock, 1911; past vice-president of the Arkansas Medical Society and the Southeast Arkansas Medical Society; veteran of the Spanish-American War; past president of the county board of education; on May 17, 1948, honored at a "Dr. Douglas Day" celebration in Eudora; died Aug. 12, aged 84, of cerebral hemorrhage.

Engdahl, Frederick William, Dallas, Texas; University of Minnesota Medical School, Minneapolis, 1934; veteran of World War I; died June 11, aged 63, of myocardial infarction and hypertensive cardiovascular disease.

Gaunt, George Arthur ⊕ Boston; College of Physicians and Surgeons, Boston, 1916; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association and the New England Society of Psychiatry; neuropsychiatric examiner for the Veterans Administration; died May 27, aged 65, of heart disease.

Giallombardo, Nicholas Perrone, Somerville, Mass.; Middlesex College of Medicine and Surgery, Waltham, 1930; died in the Baker Memorial-Massachusetts General Hospital, Boston, July 13, aged 56, of carcinoma of the rectum with metastases to the liver.

Hadley, William Sampson, Norfolk, Va.; Jefferson Medical College of Philadelphia, 1921; died July 30, aged 56, of cancer of prostate with metastasis.

⊕ Indicates Member of the American Medical Association.

Hall, Arthur Joseph ⊕ Washington, D. C.; Columbian University Medical Department, Washington, 1886; served during World War I; died Aug. 12, aged 96, of arteriosclerotic cardiovascular renal disease.

Hall, Charles Francis Adams, Newburyport, Mass.; Boston University School of Medicine, 1898; formerly chairman of local water board; affiliated with Worcester Memorial Hospital and Anna Jaques Hospital, where he died July 30, aged 80, of chronic pulmonary fibrosis and cerebral thrombosis.

Hartman, Perry Vernon Sr., Lake Placid, Fla.; Jenner Medical College, Chicago, 1915; Loyola University School of Medicine, Chicago, 1916; also a graduate in pharmacy; served during World War I; at one time practiced in Granville, Ill., where he was coroner of Putnam County and township and village health officer; affiliated with St. Margaret's Hospital in Spring Valley; died Aug. 6, aged 75, of cerebral thrombosis.

Heady, Elmer Ethelbert, Texhoma, Okla.; Kentucky School of Medicine, Louisville, 1894; served during World War I; at one time practiced in Gate, where he was postmaster; died in the Veterans Administration Hospital, Marlin, Texas, Aug. 6, aged 85, of cerebral arteriosclerosis.

Henney, William Henry ⊕ McIntosh, Minn.; University of Nebraska College of Medicine, Omaha, 1908; for many years mayor and health officer of McIntosh; died July 26, aged 75, of carcinoma of the liver.

Hooton, Lorenzo, Cross Plains, Ind.; Louisville (Ky.) Medical College, 1907; died June 13, aged 82, of lobar pneumonia, chronic myocarditis, and generalized arteriosclerosis.

Hosmer, Charles Morton ⊕ San Diego, Calif.; University of Pennsylvania Department of Medicine, Philadelphia, 1900; died June 21, aged 79.

Hufstedler, Amos Gideon ⊕ Knoxville, Tenn.; University of Nashville Medical Department, 1911; director of the Knox County Health Department; died in St. Mary's Hospital July 27, aged 68, of coronary thrombosis.

Jackson, Arthur Dudley ⊕ Lieut. Col., U. S. Army, Palo Alto, Calif.; Northwestern University Medical School, Chicago, 1899; at one time superintendent of the Wesley Memorial Hospital in Chicago, where he was instructor in pediatrics at his alma mater; served during World War I; entered the medical corps of the regular army Sept. 8, 1920; retired Oct. 31, 1937; died July 22, aged 80, of gastrointestinal hemorrhage and chronic duodenal ulcer.

Jackson, Jean Albert ⊕ Wausau, Wis.; Bennett Medical College, Chicago, 1901; past president of the Wood County Medical Society and the Marathon County Medical Society; formerly practiced in Mosinee, where he was a member of the school board; died in St. Mary's Hospital May 3, aged 80, of extradural hematoma due to a head injury sustained in a fall and bronchopneumonia.

Jones, Thomas Amos, Kansas City, Mo.; Howard University College of Medicine, Washington, D. C., 1906; died June 19, aged 74, of chronic parenchymatous nephritis.

Kinne, John Baxter ⊕ Aberdeen, Wash.; Rush Medical College, Chicago, 1906; fellow of the American College of Surgeons; veteran of the Spanish-American War and World War I; on the staff of St. Joseph's Hospital; died July 20, aged 76, of cerebral thrombosis.

Kiss, Eugene I., Pearl River, N. Y.; Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest, Hungary, 1914; died in the Nyack (N. Y.) Hospital May 13, aged 68, of cerebral thrombosis.

Knox, Edwin Stanton ⊕ Paoli, Ind.; Medical College of Indiana, Indianapolis, 1895; formerly practiced in Indianapolis, and for some time served as Marion county deputy coroner; died in French Lick, June 20, aged 84, of cerebral hemorrhage.

Koppel, William, Boston; Tufts College Medical School, Boston, 1919; member of the New England Pediatric Society; served during World War II; associated with the Veterans Administration; died in the Veterans Administration Hospital Aug. 5, aged 59, of amyloidosis.

Lingenfelter, Claude A., Bucyrus, Ohio; New York Homeopathic Medical College and Hospital, New York, 1906; served during World War I; on the staff of the Bucyrus City Hospital; died Aug. 17, aged 70, of uremia.

Little, John A., Evanston, Ill.; Rush Medical College, Chicago, 1898; died in Burbank, Calif., June 7, aged 85, of cerebral thrombosis with encephalomalacia.

Luchsinger, Harry Warner ⊕ Housatonic, Mass.; Albany (N. Y.) Medical College, 1894; in 1916 was named a member of the board of health of Great Barrington and served in that capacity for many years; vice-president of the Housatonic National Bank; affiliated with Fairview Hospital in Great Barrington, where he died July 30, aged 81, of heart disease and arteriosclerosis.

McCarty, Edward Michael, Cambridge, Mass.; College of Physicians and Surgeons, Boston, 1905; formerly practiced in Somerville, where he was for many years city physician; died Aug. 1, aged 80, of arteriosclerosis.

McElroy, Arthur Perritt ⊕ Union, S. C.; Medical College of the State of South Carolina, Charleston, 1907; formerly vice-president of the South Carolina Medical Association; died Aug. 10, aged 78.

MacElroy, John Rankin ⊕ Jonesville, N. Y.; Albany (N. Y.) Medical College, 1894; past president of the Saratoga County Medical Society and the New York State Health Officers Association, of which he was also vice-president; for many years county health officer and school physician; served two terms as supervisor of the town of Clifton Park, and at one time was chairman of the Saratoga County Board of Supervisors; past president of the alumni association of his alma mater; died in Ellis Hospital in Schenectady Aug. 3, aged 81.

McFarling, Alonzo C. ⊕ Shawnee, Okla.; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1909; on the staffs of the Shawnee Municipal Hospital and the Baxter Hospital, where he died July 29, aged 76, of coronary disease.

Mackoy, Frank William ⊕ Milwaukee; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; specialist certified by the American Board of Radiology; member of the National Gastroenterological Association, Radiological Society of North America, and the American College of Radiology; served during World War I; at one time on the faculty of Marquette University School of Medicine; on the staff of the Sacred Heart Sanitarium, where he died Aug. 17, aged 74, of coronary thrombosis.

Meichner, Frederick Henry ⊕ Long Island City, N. Y.; Long Island College Hospital, Brooklyn, 1909; member of the American Academy of Pediatrics; died June 6, aged 68, of acute coronary occlusion.

Merriam, Maxwell S. ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1920; specialist certified by the American Board of Obstetrics and Gynecology; fellow of the American College of Surgeons; affiliated with the Maimonides Hospital; died in Saranac Lake (N. Y.) General Hospital Aug. 9, aged 57.

Messinger, Herbert Borchard ⊕ Napa, Calif.; McGill University Faculty of Medicine, Montreal, Canada, 1931; fellow of the American College of Surgeons; served during World War II; on the staff of the Parks Victory Memorial Hospital; died in St. Luke's Hospital, San Francisco, July 21, aged 53, of myocardial insufficiency.

Middlebrooks, Chester Overton ⊕ Athens, Ga.; Atlanta College of Physicians and Surgeons, 1907; served during World War I; on the staffs of St. Mary's and Athens General hospitals; died July 21, aged 71, of cerebral thrombosis, arteriosclerosis, and diabetes mellitus.

Miller, Samuel Irving ⊕ Houston, Texas; University of Texas School of Medicine, Galveston, 1938; specialist certified by the American Board of Internal Medicine; an associate member of the American College of Physicians; assistant professor of clinical medicine at Baylor University College of Medicine; served during World War II; affiliated with Hermann Hospital, Jefferson Davis Hospital, and Southern Pacific Hospital; on the staff of the Methodist Hospital, where he died July 11, aged 41, of reticulum cell sarcoma of the right femur.

Mintz, Samuel Charles, Norwood, Mass.: Tufts College Medical School, Boston, 1907; served on the staff of Beth Israel Hospital and Massachusetts General Hospital in Boston; died in Norwood Hospital July 30, aged 70, of spontaneous pneumothorax.

Moray, Robert D. C., South Milwaukee, Wis.: Milwaukee Medical College, 1905; formerly health commissioner of the city of South Milwaukee for several terms; died in the Milwaukee County General Hospital June 30, aged 77, of arteriosclerosis.

Musselman, Wendell Holmes ⊕ Burlingame, Calif.: University of California Medical School, San Francisco, 1927; at one time an officer in the regular Navy; formerly part owner of the South San Francisco (Calif.) Hospital; died Aug. 7, aged 54.

Newlon, John Seevers ⊕ Nevada, Mo.; University Medical College of Kansas City, Mo., 1908; formerly practiced in Butler, where he was city physician and secretary and member of the board of health; died in the Research Hospital, Kansas City, July 13, aged 71, of acute coronary thrombosis and arteriosclerosis.

Pessl, Paul David ⊕ Chicago; Medizinische Fakultät der Universität, Vienna, Austria, 1923; died in the Columbus Hospital Aug. 19, aged 64, of cerebral thrombosis and coronary arteriosclerosis.

Rademaker, Lee Albert ⊕ Salisbury, Md.; University of Pennsylvania School of Medicine, Philadelphia, 1928; specialist certified by the American Board of Surgery; fellow of the International College of Surgeons and the American College of Surgeons; affiliated with Nanticoke Memorial Hospital in Seaford, Del., and the Peninsula General Hospital; died in the Passavant Memorial Hospital, Chicago, Sept. 8, aged 51, of dissecting aneurysm of the aorta.

Ragan, Ashland McAfee, Edwards, Miss.; Memphis (Tenn.) Hospital Medical College, 1907; died in Jackson Aug. 9, aged 70.

Rhodius, Eustachius George, St. Louis; St. Louis College of Physicians and Surgeons, 1896; died in the Evangelical Deaconess Hospital June 2, aged 86.

Rickards, Ernest Arlington ⊕ Seattle; Medico-Chirurgical College of Philadelphia, 1903; died recently, aged 80.

Ricks, Leonard E. ⊕ Fairmont, N. C.; Medical College of Virginia, Richmond, 1896; died in the Robeson County Memorial Hospital, Lumberton, May 19, aged 83, of uremia.

Ryals, Charles Howell ⊕ Dellwood, Fla.; Medical College of Georgia, Augusta, 1903; died in Jackson Hospital, Marianna, May 3, aged 78, of a cerebral accident.

Shepard, Clarence Edward ⊕ Sulphur Grove, Ohio; Starling-Ohio Medical College, Columbus, 1909; for many years member of the county board of health; died in St. Elizabeth Hospital, Dayton, July 14, aged 70, of bronchopneumonia and myocardial infarction.

Smith, Joel Francis ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1937; served during World War II; affiliated with Midwood and Victory Memorial hospitals; died in Warwick (N. Y.) General Hospital July 29, aged 44, of a heart attack.

Smith, Lawrence Richard ⊕ Watertown, N. Y.; Albany (N. Y.) Medical College, 1927; city health officer; affiliated with the House of Good Samaritan and the Mercy Hospital; died July 21, aged 52, of coronary thrombosis.

Smolczynski, Karol M., Chicopee, Mass.; Chicago College of Medicine and Surgery, 1912; formerly a trustee of Chicopee Public Library and a member of the board of health; died in Springfield July 20, aged 64, of congestive heart failure.

Spoon, Samuel Clarence Jr. ⊕ Burlington, N. C.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1918; died June 2, aged 58, of cerebral thrombosis.

Stalker, Harry Alexander ⊕ Pondcreek, Okla.; Rush Medical College, Chicago, 1896; died in St. Mary's Hospital, Enid, July 18, aged 82, of carcinoma of the rectum, hypertrophy of the prostate, cerebral hemorrhage with right hemiplegia, and diabetes mellitus.

Stallings, Thomas Wesley ⊕ Tulsa, Okla.; Louisville (Ky.) Medical College, 1905; formerly health officer of Tulsa County; affiliated with Hillcrest and St. John's hospitals; died in Mercy Hospital July 15, aged 76, of cerebral hemorrhage.

Stell, Jack Sidney ⊕ Hot Springs National Park, Ark.: Tulane University of Louisiana School of Medicine, New Orleans, 1917; past president of the Garland County Medical Society; served during World War I; formerly on the staffs of the Methodist and Levi Memorial hospitals; at one time chief of staff at St. Joseph's Infirmary; died July 31, aged 65, of pulmonary embolism.

Stephenson, Robert A. ⊕ Flint, Mich.; Columbia University College of Physicians and Surgeons, New York, 1918; died in the Hurley Hospital June 14, aged 62, of acute myocardial infarction.

Stevens, Eugene Leslie ⊕ Belfast, Maine; Medical School of Maine, Portland, 1892; for many years on the staff of the Waldo County Hospital, of which he was one of the organizers; died July 24, aged 88, of coronary thrombosis.

Stone, Eldon Wright ⊕ Bowling Green, Ky.; Vanderbilt University School of Medicine, Nashville, Tenn., 1915; served overseas during World War I; on the staff of the Bowling Green-Warren County Hospital, where he died July 22, aged 62, of hypertensive arteriosclerotic heart disease.

Sullivan, Lester Lee, Waldron, Ark. (licensed in Arkansas in 1903); died July 20, aged 83, of a heart attack.

Tulin, Philip ⊕ Bristol, Pa.; Jefferson Medical College of Philadelphia, 1935; member of the Industrial Medical Association; served during World War II; died Aug. 2, aged 44, of polycythemia vera.

Van Becelaere, Lawrence Henry ⊕ Ecorse, Mich.; Detroit College of Medicine, 1917; died June 8, aged 60, of coronary thrombosis.

Voss, Frederick John ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1894; an examiner for a life insurance company; died in Northeastern Hospital Aug. 17, aged 82, of arteriosclerotic heart disease.

Vroman, Mason E. ⊕ Port Huron, Mich.; Detroit College of Medicine, 1904; died June 22, aged 80, of myocardial degeneration.

Wall, John Young, Waverly, Tenn.; Mississippi Medical College, Meridian, 1912; died April 27, aged 74, of pneumonia and diabetes mellitus.

Warner, Harry Jackson ⊕ Medical Director, U. S. Public Health Service, retired, Lemon Grove, Calif.; George Washington University School of Medicine, Washington, D. C., 1907; retired from the U. S. Public Health Service Aug. 1, 1944; died in the Paradise Valley Hospital in National City, July 26, aged 74, of adenocarcinoma of the head of the pancreas.

Watson, Berton G., Benton Harbor, Mich.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1888; at one time city health officer; died in the Mercy Hospital July 22, aged 86, of cerebrovascular hemorrhage.

Wiley, Harry Josiah ⊕ Huntington Park, Calif.; University Medical College of Kansas City, 1904; on the staff of the St. Francis Hospital in Lynwood; died June 9, aged 72, of cerebral thrombosis.

Williams, Edward Burrson ⊕ Montezuma, Iowa; Missouri Medical College, St. Louis, 1899; died Aug. 15, aged 85, of senility.

Williams, Isaac Elmer, St. Mary's, Ohio; Kentucky School of Medicine, Louisville, 1892; died in St. Mary's Hospital July 3, aged 87, of coronary thrombosis.

Witkoff, Benn ⊕ Hasbrouck Heights, N. J.; Eclectic Medical Institute, Cincinnati, 1928; on the staff of the Hasbrouck Heights Hospital; died June 28, aged 53, of injuries received when the automobile in which he was driving was struck by a train.

Witte, Kenney Lyght ⊕ Leland, Miss. (licensed in Mississippi in 1907); served as mayor; affiliated with City Hospital, where he died Aug. 17, aged 72, of coronary occlusion.

FOREIGN LETTERS

ARGENTINA

Recent Meetings.—The Fourth International Congress of Cancerology was held in São Paulo, Brazil, in July. Many distinguished foreign cancerologists were officially invited by the Institute of Experimental Medicine (Cancer Institute) of the Medical School of the University of Buenos Aires and the Atomic Energy Commission to a conference in Buenos Aires. Dr. George T. Pack of New York was honorary director of the conference. The Second International Congress of Thoracic Surgery was held in Buenos Aires in August. Its honorary president was Dr. Jorge Taiana, professor of thoracic surgery in the medical school of the University of Buenos Aires.

Excessive Number of Medical Students.—The overcrowding of the medical schools is increasing. This year, in the Faculty of Medicine of Buenos Aires the number of students was about 12,000. This is the largest population of medical students in one school in the world. The students can be examined every month in each of the basic sciences. The requirements for entrance into Argentina's seven medical schools have been made more severe.

New Minister of Public Health.—With the reorganization of the government, the Ministry of Public Health has been united with the Ministry of Social Welfare, and Dr. Raúl Bevacqua has been named minister.

Decorations.—The Argentine government conferred the Order of Merit on the following American physicians: G. T. Pack, J. L. Poppen, and Max Thorek.

ENGLAND

High Altitude Research.—The report of the Medical Research Council for the year 1952-1953 contains a review of the part played by members of the staff of the council in preparing for Sir John Hunt's conquest of Mount Everest last year. The basis for the preparations for the 1953 expedition was the experience gained in the expedition to Cho Oyu in 1952, organized by the Joint Himalayan Committee of the Alpine Club and the Royal Geographical Society, and the unsuccessful Swiss Everest expedition in the same year. Both these expeditions had gone straight up to high altitude with deleterious effects. Thus, the Swiss expedition, in attempting to climb from 22,000 to nearly 26,000 ft. in one day, had become so exhausted that only one of their number, with a Sherpa, was able to make an attempt on the summit. The Cho Oyu party was also insufficiently acclimatized and suffered badly from diarrhea and upper respiratory infection during the first month at high altitude, when the attempt to climb the mountain was being made. It seemed probable that these infections were contracted from the local inhabitants and the Sherpa porters. It was therefore recommended that the members of the 1953 expedition should spend a month in the Himalayas in order to pass through the stage of initial infections before going on to the mountain itself.

Work done at 20,000 ft. on Cho Oyu in 1952 showed that the main effects of extra oxygen were a reduction in fatigue and sense of effort during work and a 20% to 40% reduction in the volume of respiration. It was also found that men were able to sleep comfortably all night wearing their oxygen masks. The benefit obtained from oxygen was far greater at a flow rate of 10 than at 4 liters per minute, the minimum required for a noticeable effect at 20,000 ft. Those taking part in these experiments were convinced that at least 4 liters per minute would be needed on Everest if open circuits were used.

New open circuit sets were evolved that weighed 28 lb. and were equipped with two light alloy cylinders, each containing 800 liters of oxygen. The amount of oxygen finally sent out to Nepal was 193,000 liters (compared with 28,000 liters in 1922 and 30,000 liters taken by the Swiss in 1952). Seventeen of the 160 cylinders were found to have leaked on arrival. Of the 150,000 liters left, one-third was used for training; at the end of the expedition 16,000 liters was left unused. The climbers wore their masks for part of each day on the approach march, and training ascents were made with both open and closed circuit sets. They also learned to sleep comfortably wearing a light BOAC mask and breathing 1 liter of oxygen per minute. The open circuit sets worked satisfactorily. A flow rate of 2 liters of oxygen per minute was found adequate for descent and for the second man on the rope during ascent, but 4 liters was needed by the leader while cutting steps or making tracks. On their final climb to the summit Hillary and Tensing found a rate of 3 liters per minute sufficient. Hillary experienced no unpleasant effects when he removed his mask on the summit for 10 minutes to take photographs, but at the end of this time he realized that his movements were becoming clumsy and his thinking muddled. The closed circuit sets were also used successfully and had a greater effect on the climbing rate than the open circuit sets; in their climb of 3,000 ft. to the south summit (28,700 ft.) Bourdillon and Evans averaged 930 ft. per hour for the first hour and a half, which under prevailing conditions was comparable to Alpine standards. Above 26,000 ft. the fact that the inhaled air was warm and moist proved a great advantage, but the sets were more difficult to use than the open circuit sets, and Bourdillon thought that he suffered some loss of acclimatization on prolonged use of them.

Work rate was not significantly improved by the use of oxygen up to 22,000 ft., but above this altitude the improvement in climbing rate became increasingly evident. At all altitudes above 18,000 ft., endurance was greatly enhanced. Breathing was easy, there was less sense of effort, and fatigue at the end of the day was markedly diminished. More prolonged exertion was possible in a day with the help of oxygen than without it. Oxygen at night induced warmth and sleep and provided recovery from fatigue. Its use even for a few hours at night was thought to have played an important part in reducing physical deterioration during the assault phase.

In the past, Himalayan expeditions have usually subsisted on local foodstuffs supplemented with bulk stores taken out from England. For the 1953 expedition it was decided to break with tradition and use composite rations of the type supplied to the armed forces. Special cookers were designed to ensure an adequate supply of water at high camps, and pressure cookers, the advantage of which had not been hitherto fully appreciated, were provided to make the cooking of meat and potatoes possible at and above the base camp at 18,000 ft. Two types of rations were taken: (1) a general-purpose composite ration packed in 14 and 28 man day units, with tinned foods used to achieve palatability and variety, and (2) an assault ration for use above 20,000 ft., in which every effort was made to restrict weight and bulk; most of these foods were vacuum-packed. To cater to the personal idiosyncrasies shown by men at very high altitudes, each climber was asked to choose beforehand one or more foods he thought he would be able to eat at the high camps. These were packed in "luxury boxes," the idea being that each climber, before going high, would reject those items he did not want from his assault ration and substitute the "luxuries" of his choice.

On the whole, the rations proved satisfactory. The general-purpose ration, supplemented with yak meat, mutton, and potatoes, was eaten up to 21,000 ft. Fluid and salt requirements were well met, and there was no evidence of significant fluid deficiency, even during the assault phase. The caloric intake between 20,000 and 21,300 ft. was much more than at corresponding heights in 1952. This is attributed to a combination

---

The items in these letters are contributed by regular correspondents in the various foreign countries.

of factors including better acclimatization, the provision for normal cooking at high camps, and the variety and palatability of the food.

The provisions for protective clothing and equipment included a single cotton-nylon fabric for tents and windproof clothing. Particular attention was paid to the fit of garments. The main insulating garments were the quilted down jacket and trousers, which were light and warm and easily packed into a small space in the rucksack. Silken inner gloves, woolen mitts, and outer windproof mitts of specially woven cloth were provided for the protection of the hands, and the assault parties wore very large down mitts. The high altitude boots, worn above 20,000 ft., weighed 4½ lb. The soles were relatively thin, consisting of microcellular rubber on felt, and the uppers were padded with kapok. To keep the kapok dry, the inner layer of the uppers was of a waterproof rubberized fabric, and the outer leather layer was also covered with a loose rubberized fabric. The insulation was so good that no climber suffered from cold feet—far less frostbite.

The essential features of the sleeping bags were: (1) outer and inner compartments for use in the wide range of climatic conditions encountered; (2) a total of at least 8 lb. of down; and (3) adequate size. The bags were long enough to pull over the head and wide enough to allow a man to turn over inside the bag, and for this a slippery nylon lining was found to be an advantage. The climbers suffered severely from cold on the south col, but this was due to their leaving behind the inner component. Fortunately the temperature fell to only -25 C, not the -40 C that had been forecast. Sleeping mats were of the inflatable type, based on a design developed during the war that gives better insulation and eliminates the characteristic bouncing effect experienced by a person turning over on the ordinary type of mat. The results of all this careful planning are exemplified in the fact that in the first month after reaching Thyangboche (13,000 ft.) the average loss of weight was only 2 lb., compared with 11 lb. in the corresponding period in 1952. During the second month, spent for the most part above 20,000 ft., the average loss of weight in the five men for whom records are available was 4 lb.

Poliomyelitis Memorandum.—The Ministry of Health and the Department of Health for Scotland have published a medical memorandum on poliomyelitis that has been distributed to all health officers. Between 1912 and 1947 the lowest incidences were in 1918, when there were 228 cases in England and Wales, and in 1935, when there were 24 cases in Scotland. In the epidemic years 1920 and 1938 there were 1,297 and 1,585 cases, respectively, in England and Wales. The country experienced its first country-wide epidemic in 1947, and there have been widespread epidemics in 1949 and 1950. On being informed of a case the health officer or his representative visits the patient's home and helps to get him into a suitably equipped hospital, if this has not already been done. To avoid exhaustion, which may increase the risk of paralysis and of asphyxia in respiratory cases, ambulance journeys should be as short as possible and should never exceed one hour in duration. Home isolation should only be permitted in exceptional circumstances. After the patient's removal, chemical disinfection of his room or the ambulance is unnecessary. General cleaning and airing will suffice. Those who have had poliomyelitis should not be allowed to return to a community of susceptible children such as a nursery or school until six weeks after the onset of the disease. This does not preclude a return to the house from which they were removed, in which event the interval should not be less than three weeks.

In dealing with contacts it is recommended that adults who have been in close contact with a person who has poliomyelitis should, for at least three weeks after last exposure, avoid unnecessary meetings outside their home or business circles and take complete rest if feeling ill. Normal measures, such as adequate ventilation, directed against droplet infection are of importance, and more than usual attention should be paid to hand hygiene for six weeks or more. The institution of quarantine measures in the case of adults is not justified in the normal outbreak. Modified quarantine, obtained by persuasion, might, however, be applied with advantage in special circumstances. For example, when poliomyelitis is first recognized in an isolated community that has been free from the disease for some time, intimate adult contacts might be advised to adopt "home and garden quarantine" for three weeks. Such action might well stop an outbreak in the locality. The type of employment must also be taken into consideration in considering quarantine for adult contacts. For instance, if a close adult contact is employed in a community of children, he should be suspended from work for a period of three weeks. In the case of children, intimate contacts should be under "home and garden quarantine" whenever possible for three weeks from the latest date of possible infection.

Bathing in sewage-polluted rivers should be discouraged. In public baths where ordinary or residual chlorination is in use, a residual chlorine level of at least 0.2 ppm should be maintained at all points, not exceeding 0.5 ppm at the inlet. Where break-point chlorination is used, 0.3 ppm of residual chlorine can be maintained without complaints from bathers. Unnecessary gatherings of children are considered undesirable when the disease is prevalent. Closing of baths, cinemas, fairs, etc. is not ordinarily advocated, but persons should not travel for such gatherings to or from an area where there is an outbreak.

The recommended rules for schools are that all family contacts should be excluded from school for a period of 21 days. This means "all schoolchildren, teachers, school nurses, school meal workers, clerical assistants, and caretakers in whose household a case has occurred. Similarly, close school contacts of an affected schoolchild who have been in contact with him up to five days before the onset of his illness should be excluded for the same period." Children who have recovered from an attack should not be allowed to return to school until six weeks after the onset of the illness. An infants' department or school is more likely to be the center of infection than any other type, and, if such is the case, during an epidemic public opinion may force closure of the school, but closure of specified classes is preferable. In the case of nursery schools and classes, on the occurrence of the first case parents should be informed and the school or class closed. Generally, the reopening of schools should not be postponed, but such postponement may be desirable in the case of residential schools. On the other hand, it should rarely be advisable to close a residential school in which poliomyelitis has appeared, as dispersal provides no protection to the pupils and may only disseminate the infection. The school, however, should be placed in immediate quarantine and all visits and outings temporarily cancelled. No further admission should be accepted and no new staff should be engaged.

The postponement of tonsillectomy when poliomyelitis reaches unusual proportions in a locality is strongly advised. On inoculation against whooping cough and diphtheria the advice is, "In the meantime it is suggested that immunization schemes in the locality of an outbreak should be postponed. . . . Only occasionally should it be necessary to do this throughout a county or over a wide area. Should it be decided, however, to continue immunization it is recommended that tincture of iodine should be used for preparing the skin and that, if possible, a separate heat-sterilized syringe and needle should be used for each patient." Although there is little evidence that tooth extractions may predispose to bulbar poliomyelitis, nevertheless, as with ear, nose, and throat surgery, the possibility should be kept in mind by dentists undertaking nonurgent extractions in areas of epidemic prevalence.

Of passive immunization with gamma globulin it is stated, "This means of protection may be of some value if given to the following classes. (1) Nurses and medical students who are to be closely associated with the nursing of early cases, and who, as far as is known, have not been in contact with the infection previously. It is intended that only one injection should be given, and this prior to their going on to the wards. (2) Babies in hospitals or maternity homes who, soon after birth, are exposed to infection. (3) Children in a hospital ward in which a case of poliomyelitis develops—especially children who have recently undergone tonsillectomy." As the amount of gamma globulin in this country is limited, for the present material will only be available for the injection of persons in these categories "or when there is a very unusual epidemiological situation."

Carcinoma of the Lung.—Dr. Ewarts A. Graham of St. Louis delivered the second Sir John Fraser lecture at the University of Edinburgh in May. He described work done in collaboration with Dr. Wynder that negated the suggestion that exposure to gasoline or its products of combustion might be a factor in the cause of bronchogenic cancer. They found that there was no significant increase in the disease in garage attendants, automobile mechanics, chauffeurs, and oil field workers. Dr. Graham then described his experiments with Wynder and Croninger on the experimental production of cancer in mice by painting them with tobacco tar. A machine was devised for smoking 60 cigarettes at a time, and the tar was precipitated by sudden cooling of the smoke. This tar was dissolved in acetone and painted on the skin of a special breed of mice obtained from Dr. Little's laboratory at Bar Harbor, Maine, and known to be free from spontaneous skin tumors. Of these mice papillomas developed in 59% and epidermoid cancer of the skin in 44.4%. The average time taken for the appearance of the cancer was 71 weeks, or about half the average life span of the mouse; this corresponds to the 30 to 50 years of smoking in human beings that Dr. Graham thinks is a contributory factor in the cause of bronchogenic carcinoma. He admits that the proof of a causative relation between excessive cigarette smoking and bronchogenic carcinoma is not absolute but nearly so. To prove the relation conclusively, human volunteers would have to be willing to have a bronchus painted repeatedly for 20 to 25 years with cigarette tar and willing to spend their life in isolation to exclude other possible factors. An alternative would be to use a large animal, such as a dog, with a bronchial fistula.

Dr. Richard Doll and Dr. Bradford Hill, of the Statistical Research Unit of the British Medical Research Council, have produced further evidence to show that tobacco smoking plays some part in the causation of bronchogenic cancer (Brit. M. J. 1:1451, 1954). In October, 1951, they sent out a simple questionnaire to nearly 60,000 men and women on the medical register of Great Britain asking them their smoking habits. They were asked whether they were at the time smoking, whether they had smoked but had given it up, and whether they had never smoked regularly (not more than one cigarette or its equivalent in pipe tobacco a day). The regular smokers were also asked when they started smoking, how much they smoked, and what form of tobacco they smoked. In previous studies on this problem, the smoking history of patients with cancer of the lung has been compared with that of control patients or subjects not suffering from the disease. The present study is a "prospective" approach, the subjects first being grouped according to their smoking history and the occurrence of pulmonary cancer in the various groups determined after a known interval. Of the 60,000 physicians questioned, about 40,000 replied. After an interval of nearly two and a half years, particulars of the cause of death of 789 physicians who answered the questionnaire and who died during the period were obtained from the register of births and deaths. Particulars of only those over 35 years of age were obtained, as cancer of the lung under this age is very rare. Of the 789 deaths, 36 were reported as caused by pulmonary cancer, and, in 33, the diagnosis was confirmed by methods other than clinical. Every one of the 36 was a regular smoker, and most smoked at least 15 cigarettes a day. The death rate per 1,000 from cancer of the lung was nil in the nonsmokers, but in those smoking 25 cigarettes (or equivalent in pipe tobacco) or more a day the death rate was 1.14 per 1,000. A similar but less steep rise was also seen in the death rate from coronary thrombosis (3.89 per 1,000 in nonsmokers and 5.15 in the heaviest smokers). For all causes of death there was an excess mortality among physicians who smoked 25 cigarettes (or equivalent in pipe tobacco) or more a day. The study also revealed that, of the 36 who died from bronchogenic cancer, the majority were cigarette and not pipe smokers. Although the number of deaths was small, the mortality from pulmonary cancer was directly proportional to the amount of tobacco smoked.

Dr. E. Cuyler Hammond and associates have just given a preliminary report of a similar investigation. He states that after the age of 50 years cigarette smokers have almost twice as high a death rate from all causes as nonsmokers and that there is a causal relationship between cigarette smoking and all forms of cancer.

The shares of tobacco firms have recently fallen on the British stock market. The shares of Imperial Tobacco Company show a "paper" loss of £25 million this year and British American Tobacco, a loss of £21 million. Tobacco sales are falling off for the first time in 21 years. Even so, the British Chancellor of the Exchequer, Mr. Butler, collected £625 million from the British smokers last year—one-seventh of the cost of running the country.

Treatment of Hypertension and Thrombosis.—At the annual meeting of the British Medical Association the medical treatment of hypertension was discussed. Dr. Geoffrey Bourne of London said that blood pressure readings are often fallacious because of incorrect positioning of the patient or because the patient is nervous or obese. Hypertension is significant when, in addition to a raised diastolic pressure, there are changes in the electrocardiogram and the retinal arteries and the heart is enlarged. Benign hypertension rarely causes symptoms or requires treatment. Progressive or malignant hypertension, which is amenable to treatment, does not respond to drugs of the hexamethonium series given by mouth because of unpleasant side-effects. Pentapyrrolidinium gives better results. The initial dose of this drug should be small. Sympathectomy has failed, although it has helped some patients. Great harm may be done by repeated blood pressure readings, particularly when the results are communicated to the patient. Dr. J. Gibson Graham of Glasgow said that the commonest symptom of hypertension is dyspnea. The retinal changes depend on the rapidity of onset of the disease and the level of the diastolic pressure. Hypertension is a result of stress and strain, which probably produces high blood pressure by stimulating the higher centers through the hypothalamus, the sympathetic system, and the adrenal cortex. In the early stages of the disease activity should be modified and caloric and salt intake should be reduced. Only if these measures fail should hexamethonium compounds, hydralazine (Apresoline), rauwolfia alkaloids, and veratrine be used. Medical treatment is better than sympathectomy. According to Dr. G. B. Shaw of Glasgow, there is no effective method of controlling hypertension in its early stages. Persons with early hypertension should be kept under observation and, if they are women of child-bearing age, should be warned against pregnancy. Hexamethonium drugs help to prolong life in patients with malignant hypertension but are of little use in long-term treatment. Intelligent patients can be taught to give themselves injections of these drugs.

Discussing the use of anticoagulants in the treatment of coronary thrombosis, Prof. R. B. Hunter of Dundee said that heparin is the safest anticoagulant in coronary disease unless a bleeding source is present. It can be safely given in general practice. Injections should be given every six hours until the patient is admitted to the hospital. Anticoagulants reduce the risk of thromboembolic complications in all types of patient. Dr. A. Brown said that anticoagulants had not reduced the number of deaths taking place within 24 hours of admission to the hospital. The disadvantage of anticoagulant treatment in the home is the risk of hemorrhage, which may occur without careful laboratory control of the prothrombin time.

Drugs and Driving.—Two new drugs have recently come under censure because their use is inadvisable by drivers of automobiles. The unrestricted sale of a new hypnotic, meparfynol (Oblivon), to the public was severely criticized by the Home Office pathologist, Dr. D. Haler, when giving evidence in the case of a man charged with driving under the influence of drugs and alcohol as a result of which an accident occurred. The driver said that he had seen a newspaper article about a new drug called Oblivon that said: "It will do anything for you, no overdose, no hangover." On the day of the accident he had several drinks of gin and bought a box of the drug, taking all 12 capsules. Later in the day he bought another box and took eight capsules. After he was arrested he said he remembered nothing of the accident that occurred. A police surgeon certified that he was unfit to drive. Dr. Haler said that Oblivon had been credited in the lay press with almost magical results. Taken in large doses it would accentuate the effect of alcohol. The driver was convicted of driving under the influence of alcohol and drugs, fined, and his license withdrawn for a year. After this conviction the council of the Pharmaceutical Society issued a statement on the danger of the indiscriminate use or use in excessive quantities of maparfynol and recommended that it be sold on medical prescription only. The council advised pharmacists to supply it on this basis only.

Another new drug, chlorpromazine (10-[γ-dimethylaminopropyl]-2-chlorophenothiazine hydrochloride), also figured in a driving case. At Birmingham a man 45 years of age pleaded guilty to driving an automobile under the influence of drugs so that he did not have proper control. The accused said that for many years he had been suffering from "nerves," for which his physician had prescribed carbromal. He asked his wife to go to the doctor for a further supply of tablets. In addition to carbromal, the doctor supplied chlorpromazine. The accused had taken these drugs at night. When he awoke he remembered dressing, but the next thing he remembered was being stopped by the police in his car. The physician giving evidence said he thought that the patient was in bed and that any warning about the properties of chlorpromazine was unnecessary. The drug would have made the patient irresponsible for his actions. The magistrate said that this was an exceptional case. There was no question of the accused being under the influence of alcohol as well as the drug and he was, therefore, discharged on payment of court costs on condition that his wife watch him while he was taking chlorpromazine.

The Epileptic Child.—The care and management of the epileptic child was discussed in the section of child health of the annual meeting of the British Medical Association. Dr. J. R. Davidson said that the incidence of epilepsy in children in Britain is 1.7 per 1,000. Primary in management is to explain the nature of the disease to the parents, dispel their fears, get their cooperation, and teach the child to accept the situation. The education of the child must not be neglected, as over 90% of epileptic children can attend ordinary schools. Special schools are necessary only in cases of defective intelligence, behavior problems, or repeated fits. Temporary admission to a special institution is helpful in giving the parents a holiday. Dr. D. A. Pond said that behavior disturbances in epileptic children are comparatively rare—about 1% of all cases. Those with classical petit mal are usually passive children; they may be unconsciously rejected by their parents. Children with temporal lobe epilepsy are aggressive and annoy other persons or have undesirable obsessions. Temporal lobectomy may produce dramatic results when medical treatment fails. The parents of epileptic children should be reassured that the epileptic child is not predisposed to become a lunatic, murderer, drug addict, or criminal. Emotional tension at home sometimes increases the number of fits. Dr. J. P. M. Tizard of London said that chlortetracycline may be worth trying for lightning fits. Dr. Gillingham of Edinburgh stated that epileptic attacks may be produced by local cerebral injury such as tentorial herniation following birth injuries, arterial occlusion, subdural hematoma, cortical thrombophlebitis resulting from infection elsewhere, venous sinus thrombosis in dehydrated babies, and congenital vascular lesions. Dr. Pond said that amphetamine is useful for children with temper tantrums, whether they have epilepsy or not.

Role of Smoking in Bronchitis.—Dr. Palmer of Middlesex Hospital, London, has shown that the incidence of bronchitis is significantly greater in smokers than in nonsmokers (*Brit. M. J.* 1:1473, 1954). A consecutive group of 422 men admitted to the Middlesex Hospital from September, 1950, to September, 1952, for elective inguinal hernia repair or a partial gastrectomy were questioned on their smoking habits. There were 310 smokers and 112 nonsmokers. Each patient was examined, a history taken, and the chest roentgenogram obtained. The incidence of bronchitis diagnosed by any method was greater in the smokers than the nonsmokers, the difference between the two groups being statistically significant. The incidence of bronchitis increased markedly with increased smoking. Palmer is careful to point out that, in a disease such a bronchitis, smoking can be only one of many possible causative factors. Thus some 30% of the nonsmokers gave a history of bronchitis, and some of the heavy smokers did not suffer from the disease at all. Palmer considers that smoking aggravates an existing bronchitis and advises abstinence from tobacco by all who suffer from this disease.

Bureaucratic Control by the Ministry of Health.—Finance officers appointed by the Ministry of Health insist on a "unit system" in radiological and pathological departments to arrive at costs. Their latest report states: "In order to secure that the out-patient figures for these two departments for the 1953-4 costing returns are reasonably comparable with those for previous years it has been decided that where the actual numbers of specimens or examinations are not known the numbers of 'units' of work for each department will be converted on a national basis, for the purpose of the costing return, into numbers of specimens or examinations. The factors to be used for this purpose will be determined by the department when forms SH3 for 1953 have been collated, and hospital authorities will be notified as soon as possible."

Apparently, in the eyes of the Ministry of Health, the efficiency of the pathological and radiological departments of a hospital is based more on their paper returns than on the excellence of their work.

Teething Powders.—Several deaths have occurred as a result of giving children so-called teething powders. The Ministry of Health has issued a memorandum on the subject to the popular magazines. Babies, says the memorandum, seldom, if ever, really need teething powders. Most of these powders contain drugs that are harmless when taken occasionally but that may be harmful if used repeatedly. No mother should take the responsibility of repeated medication of a baby without medical advice. The routine weekly aperient given to babies and young children, whether in powder form or in any other form, is not necessary. If a mother thinks her baby needs a powder, it is quite likely that there is something wrong with the feeding or general management of the child. The memorandum continues that dosing with powders may only store up trouble for the future and that the mother should consult the family or clinic physician or ask the health visitor to come to see her if she is in doubt.

Dangers of Overnutrition.—Dr. Hugh Sinclair, director of the Oxford University Laboratory of Human Nutrition, described the danger of overnutrition at a meeting of the Women Public Health Officers' Association at Oxford, in July. He said that in persons who are 10 lb. (4.5 kg.) overweight the death rate is 8% above average; if they are 90 lb. (40.8 kg.) overweight the death rate increases to twice the average. An excessive intake of fat not only causes obesity but raises the blood cholesterol and the incidence of hypertension and cardiovascular disease. A heavy baby is not the healthiest, although popular lay and medical opinion once believed that this was so. Overfed animals mature earlier and die before normally fed controls, and this is possibly true of human beings also. Malnutrition, like an iceberg, is largely hidden. A vegetarian diet is incomplete for human beings. Strict vegetarians have died because of a deficiency of vitamin B_{12}, which is only present in animal foods.

Liver Not a Tonic.—For many years liver has been given parenterally to patients not suffering from anemia for its supposed tonic effect. Dr. J. R. O'Brien of Cornwall (*British Medical Journal* 2:136, 1954) has given liver injections to a large number of patients in hospital and general practice and injections of saline solution to a series of controls. The patients were suffering from a variety of medical and surgical conditions. After a course of injections they were asked if they felt better, if they were more energetic, if their appetite improved, and if they were sleeping better. A cross-over test was done on 86 patients. From the subjective results, they could not distinguish between the effects of the saline and liver injections. The reported beneficial and "tonic" effect of liver would, therefore, appear to depend on the suggestibility of the patient and the attitude assumed by the physician. Women appear to be more suggestible than men.

President of Royal College of Surgeons.—Sir Harry Platt was recently elected president of the Royal College of Surgeons in succession to Sir Cecil Wakeley. Sir Harry, an orthopedist at one time, studied at the Massachusetts General Hospital in Boston.

ISRAEL

Public Health and Socioeconomic Problems.—I. Kanev, director of the Labor Sick Fund (Kupat Holim), stated that health is interconnected with social conditions and that both influence the national economy and its development. There is a strong connection between the standard of living and the incidence of disease, as well as between social conditions and life expectancy. Seven basic aspects define social and health standards: the standard of living and average income, nutrition, health and the incidence of mass disease, education, housing, employment, and longevity. According to Professor Winslow, the world can be divided into three zones: the developed countries (the United States, Australia, Scandinavia, and a number of western European countries), constituting only about one-fifth of the world's population; the semideveloped countries (southern and eastern European countries, part of South America, and a small part of the Middle East), constituting less than one-sixth of the world's population; and the undeveloped or backward countries. The average income is $461 per person per year in the developed zone, $154 in the intermediate zone, and only $41 in the backward zone.

The developed countries have food surpluses, in contrast to the undeveloped countries where starvation or semistarvation prevails. In the developed zone the people receive a daily average of 3,040 calories and in the backward zone, only 2,150. Moreover, the decisive factor is not the weight of the food, nor even the number of calories, but the nutritional value of the food. The fact that most of the world's population lives on rice alone seriously impairs its health and its biological development. Nearly 60% of the world's inhabitants receive less than the required daily minimum of 15 gm. of animal protein, and only 22% get the 30 gm. a day that they really need. The same may be said of the vitamins and minerals that the human body requires.

Comparative summaries of average life expectancy in the various zones are illuminating: a child born in Scandinavia has prospects of living till 70, while the expectancy of a boy in India is only 30 years. Disease, undernourishment, and poor living conditions militate against a person's chances of reaching middle age. From the point of view of average income and of nutrition, Israel is a semideveloped country; from the point of view of educational standards, housing, and longevity, on the other hand, Israel is a developed country. Its health standards fall in between. From 70 to 75% of Israel's population is included in the framework of mutual sickness insurance. Two-thirds are insured with the Labor Sick Fund. Thanks to this fund medical aid has been furnished fairly to the old-timer and the newcomer. There has been an encouraging drop in the mortality rate. Although, during the peak immigration years, infant mortality jumped from 29 per 1,000 in 1947 to 51 in 1949, it fell again to 36 per 1,000 in 1953. The fact that in immigrant villages it dropped from 158 per 1,000 in 1950 to 48 per 1,000 in 1953 indicates the rapid improvement in the health standard in general. The situation should improve further with the completion of facilities for hospitalization and child care. The average life span in Israel, according to Professor Bachi, was 66.3 years for men and 69.5 years for women in 1950 and rose in 1953 to 68 years for men and 70.5 for women.

Mass immigration has brought about a noticeable change in the social structure of the population, which, for the most part, is unable to apply for treatment to private physicians and is therefore in need of public services. There is a division of functions among various health agencies in this country. The Ministry of Health deals with public health and hospitalization. Kupat Holim is concerned with the health of two-thirds of the population and maintains 850 clinics and a network of hospitals in the rural areas. Hadassah maintains the Hebrew University Hospital, and Malben accommodates the disabled and immigrants with chronic diseases. The Medical Corps looks after the health of the Army. Great progress has been made in maternity and infant care, medical service for schools, industrial health, and the fight against tuberculosis and trachoma, but not enough is being done for the crippled and disabled or in the fight against malnutrition and in preventive measures among youth. Such diseases as malaria, typhoid, and trachoma have been overcome, but all forms of dysentery and many other intestinal disorders are widespread. Only a basic change in sanitary conditions can eliminate these.

Despite the steps taken by the government, Kupat Holim, the Disability Fund, and Malben, there is still a severe shortage of hospital beds, especially for patients with mental and general medical conditions, particularly in the northern part of the country. The ratio of accommodation for the growing population has been maintained with difficulty: there were 5.4 beds per 1,000 inhabitants in 1950 and 5.8 per 1,000 in 1953. The minimum required is 5 beds for general conditions, 2.5 for mental conditions, 1 for pulmonary conditions, and 1 for convalescents and patients with chronic diseases—a total of 9.5 beds per 1,000 persons (England has 12 and Denmark 14). The shortage of medical personnel for the rural areas is a matter of great concern. Over half of Israel's physicians are over 50 years of age, and scores drop out of the service from year to year, but the younger physicians do not go out to serve in the villages. Last year, the mobilization of physicians helped substantially, but it was of no avail this year.

NORWAY

Ambulant Electroshock Treatment.—In 1943, Prof. G. Langfeldt of the University Psychiatric Clinic in Oslo courageously tried the electroshock treatment of mental patients under ambulatory conditions. At this time the risks of such treatment were taken so seriously that ambulant treatment was avoided elsewhere in Scandinavia and was actually forbidden in Sweden. Langfeldt was driven to this course by the length of his waiting list and the consequent risk of suicide and other tragedies for mental patients for whom no hospital beds could be found. Giving an account of his experience in this field at a meeting of the Norwegian Psychiatric Association in Bergen in the summer of 1954, he pointed out how he had tried to minimize the risks of ambulatory treatment by a searching physical examination of every candidate for it. With an average turnover of some 400 patients given ambulant treatment every year, he has had only one serious mishap. This was due to the faulty healing of a fracture of the forearm. There were a certain number of fractures of the spine to begin with, but most of them resulted in only slight invalidism. In the autumn of 1953, Langfeldt brought from the United States a Reiter's apparatus with which he treated 260 patients between October, 1953, and April, 1954. This apparatus is devised so that respiration is stimulated by the subconvulsive doses of electricity given. Oxygen inhalation is consequently never needed, the confusional period is short, and the patient usually regains consciousness after five minutes. To check his results, Langfeldt sent a questionnaire to the first 100 patients treated with this apparatus. Four of them did not answer, and seven of them had discontinued the treatment prematurely because they were nervous or had pain in the back. Among the remaining 89 patients, 74 had achieved a good remission. After an interval of three to five months, 59 were still in remission. The best results were achieved in patients with typical endogenous melancholia, but Langfeldt was also pleased with some of the results achieved in patients with protracted neuroses, obstinate insomnia, and certain psychoses. He appeals to general practitioners to bear in mind the advantages of such ambulant treatment and not to let their patients suffer for up to a year before giving them the benefit of it.

A Cerebral Palsy Study.—Investigations started in 1950 in the Scandinavian countries with regard to cerebral palsy have already thrown new light on certain aspects of this disease, which in Norway alone affects some 1,500 persons under the age of 20. It is numerically the most important cause of crippling, even considering poliomyelitis. At the 11th Scandinavian Pediatric Congress held in Oslo in the summer of 1954, Prof. Leif Salomonsen and his co-workers of Oslo reported that their air encephalograms have often showed signs of damage to central parts of the brain in the form of dilation of the third ventricle. Of 320 patients there were 66 with manifest signs of epilepsy as indicated by convulsions. Of another 176, 20 showed "epileptogene" foci without a history of convulsions. These patients can be classified as potential epileptics. The obscurity still existing with regard to cerebral palsy is indicated by the fact that these observers failed to class one-fourth of their patients definitely in any of the four known types of the disease (characterized by spasticity, athetosis, rigidity, or ataxia). They conclude that some authors include this large group of patients in the spastic group and others in the athetotic group, a difference of opinion that probably accounts for the great variation in the relative frequency of the various clinical types of cerebral palsy reported. They find that the main cause of cerebral palsy is not so much any cerebral malformation of a genetic character nor cerebral developmental inhibition caused by damage to the fetus in the embryonic period as anoxemic brain necrosis occurring near the time of birth.

Professor Schreiner Honored.—On the occasion of the 80th birthday of Prof. K. E. Schreiner, his many friends and former pupils joined in expressing their veneration for him by the publication of a well-illustrated, 423 page book entitled "Aspects of Cerebellar Anatomy." The editors are his colleagues and successors, Prof. Jan Jansen and Alf Brodal. The contents of this bulky volume represent the results of investigations carried out at the Anatomical Institute in Oslo during the last 20 years. In addition to chapters written by the editors themselves, there are chapters by Fred Walberg, Wilhelm Harkmark, and John Torgersen. Since this volume is chiefly concerned with Norwegian research, it does not profess to be a monograph on the anatomy of the cerebellum, and the histology of the cerebellar cortex is not treated systematically. For readers who have not specialized in the anatomy of the cerebellum, the most interesting chapter would probably be the introduction by Prof. L. Mohr, which gives an eminently human portrait of Professor Schreiner.

The Norwegian State BCG Laboratory.—The report for 1953 for the Norwegian BCG laboratory shows that it is now under the direction of Dr. Ivar Hesselberg. A Swedish strain of BCG, obtained from the BCG laboratory in Gothenburg, is now issued on alternate weeks, the old Norwegian strain being issued on the other weeks. Every week two concentrations of the vaccine are issued. The vaccine from the Norwegian strain is issued in a concentration of 1 mg. of BCG per milliliter for intracutaneous administration and 20 mg. of BCG per milliliter for percutaneous administration. The corresponding concentrations of the Swedish strain are 0.5 and 10 mg., respectively. For intracutaneous vaccination 17,419 and for percutaneous vaccination 5,732 ampuls were issued in 1953, and 87,457 vaccinations were performed. Of this number 10,605 were revaccinations.

PERU

Course on Cancer.—A course on cancer was presented in August by the Neoplastic Diseases Institute in Lima with the cooperation of cancerologists from all over the world who attended the International Congress of Cancer that took place in São Paulo, Brazil. Dr. Brunschwig of New York performed a partial resection of the duodenum and the tail of the pancreas. All the surgical demonstrations were televised. Dr. Oleson of the United States spoke about the chemotherapy of cancer, referring especially to the phosphoramids and puromycin (6-dimethyamino-9-[3′-*p*-methoxy-L-phenylalanylamino-3′-deoxy-β-D-ribofuranosyl]-purine). The latter has given results surpassing those obtained with any other known antimitotic. Dr. Farr of New York reported on the treatment of brain tumors with radioactive elements by means of the "capture of electrons," which consists of giving a compound of boron-10 intravenously. This element is selectively taken up by the brain tumor tissue. After 10 or 15 minutes the patient is taken to an atomic battery with which his brain is bombarded with slow neutrons, which are absorbed by the boron, causing its breaking down into lithium and alpha particles. The great quantity of radiation that is produced quickly disseminates into the malignant cells and destroys them. Drs. Hayes Martin of New York and Guzmán Blanco of Venezuela were taken into the National Academy of Surgery, and Dr. Brunschwig was nominated as an honorary member of the Peruvian Society of Obstetrics and Gynecology.

Proceedings of the Arequipa Meeting.—The first postgraduate course of medical studies ever held in Peru was conducted at Arequipa in August. In addition to clinical lectures the problem of medical education was discussed. The overcrowding of the San Fernando's Faculty of Lima with the resultant decrease in the effectiveness of the teaching has recently led to the limiting of the student body to 150 in the first year class in medicine. This drastic measure has compelled many students to travel to foreign countries in search of medical education. This flight of the medical students is now causing alarm, and measures to stop it are urgently sought. A movement is now on foot to establish a school of medicine in Arequipa.

The Hipólito Unanue Award.—The Hipólito Unanue award, granted annually to the person performing the best medical research in Peru, was presented for 1953 to Dr. Federico Sal y Rosas, for his excellent work entitled "Medico geografico y terreno convulsivo." Dr. Sal y Rosas is chief of the psychiatry department of the Police Hospital of Lima and is in charge of the women's ward in the "Victor Larco Herrera" hospital for mental diseases.

Death of Dr. Pazos Varela.—Dr. Ricardo Pazos Varela, an eminent urologist, died in Lima on Aug. 16. He founded the first urologic center in Peru, and in 1952 he founded the Peruvian Urological Society and became its honorary president for life. He was also a member of the American College of Surgeons. In 1950 he was the chairman of the first Pan-American Congress of Medical Education.

Dr. Andrés Rotta Honored.—Dr. Andrés Rotta, cardiologist and professor of physiopathology of the school of medicine of the San Marcos University of Lima, has been made secretary-treasurer of the Latin American Branch of the Inter-American Society of Cardiology.

SWEDEN

Methods of BCG Vaccination.—At a meeting of the Swedish Medical Society, the comparative merits of subcutaneous, intracutaneous, and percutaneous BCG vaccinations were discussed, and the first of these was shown to be unsatisfactory. Dr. E. Jacobsson reported on 300 children who were given subcutaneous and 300 who were given intracutaneous injections of BCG. The dosage was the same for the two groups. In 50% of the group treated subcutaneously there was some secretion and/or necrosis at the site of injection, and in 16% this reaction was comparatively severe. The group treated intracutaneously showed a comparatively violent reaction in only 2%. Dr. A. Gunther compared the intracutaneous and the percutaneous (scarification) methods. In his experience these two methods may achieve an equally high degree of tuberculin allergy, but the latter has the advantage of not provoking local reactions with scarring. It may be that the scarified child becomes tuberculin-negative again sooner than the child vaccinated by the intracutaneous method, and the scar left by the intracutaneous method may be a useful reminder of BCG vaccination with forgetful mothers, but, when revaccination is indicated, the mothers are more cooperative when they have seen the mildness of the reaction to scarification.

At a meeting of the Southern Swedish Pediatric Association, Dr. Ing-Britt Thurell compared the effects of BCG vaccination in infants who were and others who were not the offspring of tuberculous mothers. Of the 75 children of tuberculous mothers, 65% had to be revaccinated once, 25% twice, and 4% three or more times. Only 0.9% of the children of nontuberculous mothers had to be revaccinated. This refractoriness on the part of the offspring of tuberculous persons may be due to antibodies transferred from mother to child. There is also the possibility that the child of a tuberculous mother is exposed to nonspecific, nosocomial infections rendering it refractory to BCG vaccination, whereas the child of healthy parents is not exposed to such infections. A report on Dr. Thurell's study appeared in *Nordisk medicin* for Aug. 12, 1954.

Congress on Internal Medicine.—A serious drawback with important international medical congresses is the length of time between the holding of such meetings and the publication of the papers presented at them. This interval can be appreciably shortened by the premeeting publication of summaries of the papers to be read. This course was followed in the case of the Third International Congress on Internal Medicine that was held in September in Stockholm. Dr. Erik Sköld's outline of the papers to be presented at this meeting is published in *Nordisk medicin* for Aug. 19 and shows how wide is the interest taken in it, with 30 nations sending representatives. With Prof. Nanna Svartz presiding, the congress will be held in three main sections, devoted respectively to hypertension, the collagen diseases, and a free discussion of the most important topics of the day in internal medicine. One of the articles is by Olaf Refvem of Oslo on his animal experiments that have shown that the administration of phospholipids may lead to the development of epithelioid cells resembling those seen in sarcoidosis.

Death of Professor Troell.—Prof. Abraham Troell died this year only a few days after his last article on goiter had been published. He had a distinguished career as a surgeon and gynecologist. Born in 1881, he studied much abroad in his earlier years, specializing at first in gynecology and obstetrics. In 1930 he was put in charge of the surgical side of the St. Göran Hospital, where he remained till he reached the age limit. Many of the articles he published dealt with the operative treatment of goiter, on which he was an authority. He was the first to introduce the consistent treatment of exophthalmic goiter with iodine in Sweden, where his surgical skill did much to reduce the operative mortality. This, according to his latest returns, was down to 0.6%. He took an active part in the life of the Swedish Medical Association, of which he was chairman in 1944 and 1945.

TURKEY

Pubic Osteitis.—In an article in *Dirim* Dr. Shemsi Özdilek of Ankara reported on three patients with pubic osteitis. Three months prior to admission a 60-year-old man had undergone prostatectomy. Some time afterward pain developed in his left thigh and inguinal region. Examination revealed a urinary fistula in the operative scar. The left side of the pubis was tender. Internal urethrotomy was performed and an indwelling catheter introduced. Within a week the wound healed. The patient was given short-wave diathermy for a week, then, since the pain decreased, he was given analgesics and discharged. The second patient was 69 years old. He complained of great pain in the back, left thigh, and inguinal region; nausea, vomiting, and painful micturition. Cystoscopy showed an ulcerated tumor to the left of the urethral orifice. By partial resection of the bladder the tumor was removed. After 47 days the pubis, thigh, and inguinal region became very painful. Radiographic examination revealed normal kidneys and rarefaction of both sides of the pubis. The patient was given calcium and analgesics. The third patient was 52 years old. Because of painful micturition he had two suprapubic prostatectomies with an interval of 25 days between operations. Three months later great pain developed in the hip and thigh. Ten days before admission a urinary fistula developed. Palpation revealed a smooth, hard, and empty prostate. Radiographic examination of the hypogastric region showed irregular periosteal osteophytes. An indwelling catheter was introduced, the patient was given antibiotics and analgesics and the fistula closed within a week. Because of atony of the bladder and inability to urinate the patient was taught how to introduce the catheter and was discharged.

Puerperal Inversion of the Uterus.—In *Dirim*, volume 27, no. 9, Dr. Muvaffak Afir reported a case of puerperal inversion of the uterus in a 19-year-old primipara who had given birth to a normal child. She was attended by a practical midwife who had forcibly removed the placenta, causing extreme pain, hemorrhage, and unconsciousness. The patient was removed to the hospital where she apparently recovered. She continued to be treated for anemia, and her general condition improved. When hemorrhage recurred after three weeks she was readmitted to the hospital, where her erythrocyte count was found to be 2,880,000. Her leukocyte count was 7,000 and her hemoglobin level was 22%. Her blood pressure was 130/90 mm. Hg. Pelvic examination revealed a smooth tumor that bled profusely when palpated and had all the characteristics of an inverted uterus. With the patient under lumbar anesthesia a posterior colpohysterectomy was performed. The uterus was found to be inverted, the cavity swabbed with one million units of penicillin, and the uterus put back. The vagina was packed with sulfonamide tampons that were removed the following day. There was no fever and recovery was uneventful. Although there are two schools for the training of rural midwives, in some of the remoter rural communities births are still sometimes attended by untrained midwives as in the case cited.

Double Uterus and Vagina with Double Pregnancy.—Dr. Halil Çiray of Ankara reported superfecundation in a 24-year-old primipara who had two vaginas and a double uterus. She complained of a tender swelling on the left side of the abdomen, vertigo, nausea, and anorexia. She had not menstruated for five months and for the last few days prior to admission there was a faint discharge of dark blood. After her first menstruation at the age of 14 she did not menstruate for 18 months and then menstruated every second month. The symptoms of impending menstruation were a small hard swelling in the right side of the abdomen and pain on the left side of the rectouterine excavation. Two physicians had advised operation for ectopic pregnancy. Examination revealed a palpable uterus, no blood in the vagina or cervix, but traces of blood in the region of the hymen. Exploration by bougie revealed a second vagina. Introducing a no. 7 bougie 12 cm. into the cervix proved the presence of a second uterus, and dilation with laminaria revealed a four month pregnancy and threatened abortion. Under anesthesia a dead fetus of foul odor was removed from the left uterus. The patient was given 800,000 units of penicillin. Further examination revealed a 2-month-old fetus in the right uterus, which was hard and not bleeding. On the third day there was severe pain and hemorrhage. Under anesthesia the second fetus was removed. Recovery was uneventful.

Tuberculosis.—BCG vaccination in Turkey began in 1948. In 1953 the Ministry of Health and Social Welfare initiated a country-wide campaign. In the *Turkish Bulletin of Hygiene and Experimental Biology*, volume 14, no. 1, Dr. M. Erzin reported that, in 1953, 2,163,479 persons were given tuberculin tests and 1,928,564 persons were followed up. Of these, 1,010,188 persons had positive reactions and 904,445 persons were given BCG vaccination. Mobile laboratory units visit all urban and rural communities, making 5,000 to 6,000 tests a month. Tuberculosis is now the chief public health problem in Turkey, and the death rate from tuberculosis (all kinds), which after World War II was 187 per 100,000, is now between 100 and 123.

CORRESPONDENCE

USE OF NEW DRUGS

To the Editor:—The letter of Drs. Hugh Smith and Hugh Smith Jr. in the June 26, 1954, issue of THE JOURNAL, page 858, cites a case of an adverse effect following the use of Rauwolfia serpentina derivatives. Whenever a new drug appears on the market and the manufacturer suggests a certain dosage, it seems that a good conservative policy to follow is to start with a small dose, in this case 0.125 mg. per day instead of 0.125 mg. three times a day, and increase the dose gradually. One never knows what dose will be the most effective unless this course is followed. For example, we know that the average patient with coronary disease will be relieved of the anginal syndrome with 1/150 grain (0.4 mg.) of glyceryl trinitrate (nitroglycerin), and yet side-reactions develop in many who cannot tolerate a dose greater than 1/400 grain (0.15 mg.). Apparently, from clinical observations, all hypertensive patients have an optimum blood pressure level at which they are most comfortable, even though the reading may not be normotensive. We should not try, by the use of drugs, to return all hypertensive patients to normotensive levels, and I am happy to note that more physicians are beginning to appreciate this.

SAMUEL BLINDER, M.D.
929 Park Ave., New York 28.

A. M. A. AND OASI

To the Editor:—I wish to comment on the stand of the A. M. A. regarding Old Age and Survivors Insurance. I am 35. I am interested in the "survivor" aspect of this coverage. Were I covered and should I die, my wife and three infants would receive about $200 a month for 17 years. The premium on this coverage is slight. True, it may rise. It will also rise for the plumber, the baker, the mechanic, the dish washer. If they can accept the premium rise, then so can I. In my opinion it is anachronistic for the A. M. A. to oppose physician enrollment in a plan that includes the great majority of America's working population. I would not have supported OASI at its inception. I believe that each man should look out for himself. But I know that OASI will never be withdrawn; at this stage of its development we serve no purpose by standing apart from it and pointing a finger of distaste at it. The delegate to the House of Delegates who represents me, I fear, did me no service by voting against my coverage in OASI. If the plumber, the baker, the mechanic, the dish washer die tomorrow, their wives and children will benefit from OASI. I want the same advantage for my survivors. Reed-Jenkins-type "set-asides" would be inconsiderable unless put into life insurance. And even if such set-asides were permitted, to bring us physicians even with retirement-plan workers in industry, I would still want OASI because the persons with retirement plans have it.

I believe that the percentage of physicians who realize that there is a "survivor" aspect to OASI is small. I find it so in my conversations with my colleagues. If these doctors who are unacquainted with the survivor benefits were caused to recognize them, I firmly believe that the sentiment in favor of OASI would be overwhelming among them. I like to think of myself as independent and self-reliant. I have no fear whatsoever of being unable to provide for myself in my old age. If the A. M. A. were merely combating old age assistance, I believe I would fight with it. But I have no guarantee of living to old age, and I want my survivors, if I die, to have all benefits that the American people, in their wisdom, have promised to most others.

It may be that before long OASI will become expensive insurance. I repeat that the plumber, the baker, the mechanic, and the dish washer will also find it expensive. And you must agree with me that before its cost becomes politically exorbitant means will be found to tap the public purse to subsidize OASI and thus keep its apparent cost down. And who fills the public purse?—my four friends above *plus* me.

SAMUEL S. FARIS, M.D.
239 Easton Rd., Glenside, Pa.

The above letter is similar to some others that the Association has received concerning the bill that was considered by the 83rd Congress relative to the Old Age and Survivors Insurance provisions of the Social Security Act to self-employed persons, including physicians. There are, however, many factors that must be considered in analyzing the policy of the Association. On three occasions the House of Delegates, the policy-making body of the American Medical Association, has expressed disapproval of the *compulsory* coverage of physicians under Title II of the Social Security Act. It has not opposed the voluntary inclusion of physicians under the system. These expressions by the elected representatives of the medical profession must be considered as the views of the majority of the physicians. In addition, the majority of the polls that have been conducted in this regard indicate that the medical profession does not wish to be covered by the Social Security Act. As long as proposed legislation is designed to include physicians under the Social Security Act on a *compulsory* basis and as long as the majority of the physicians of this country do not desire to be included under that Act, such legislation must be opposed by the Association. There is and will be no objection to legislation permitting voluntary inclusion, which would permit free choice by the individual physician. To agree to compulsory coverage or to fail to oppose it would be grossly unfair to the majority of physicians and a violation of a mandate expressed by the profession through the House of Delegates. —ED.

SURGICAL REPAIR OF VENTRICULAR SEPTAL DEFECTS

To the Editor:—In their article "Surgical Repair of Intraventricular Septal Defects" in THE JOURNAL of March 20, 1954, page 986, Drs. E. B. Kay and H. A. Zimmerman describe an operation on a 21-year-old woman with an uncomplicated ventricular septal defect. The patient had "some dyspnea" but "no appreciable enlargement of the heart." This surgical procedure was predicated on the basis that "a high proportion of patients with intraventricular septal defects must lead lives of restricted activity and that others die prematurely." There are no available statistical studies that confirm this statement. In fact, as a result of observing several hundred patients with congenital heart disease over many years, it is our clinical impression that the vast majority of patients with uncomplicated ventricular septal defects live normal lives and need no treatment of any kind. This is substantiated by Roger's original description. Further, we have the impression that, if a child with this lesion reaches school age and shows little or no cardiac enlargement, such a patient has so small a septal defect that no cardiac enlargement will ever occur. To have subjected this 21-year-old woman to such an operation seems unwarranted. Such surgery can lead only to a high mortality among a group of patients who have a good chance of living out a normal life expectancy with no treatment.

MORSE J. SHAPIRO, M.D.
SIDNEY S. SOBIN, M.D.
416 N. Bedford Dr., Beverly Hills, Calif.

This letter was referred to Drs. Kay and Zimmerman, who replied as follows:

We believe Drs. Shapiro and Sobin have correctly stated the opinion commonly held in the past in reference to ventricular septal defects. This opinion is largely a holdover from an article written by Dr. Maude Abbott in 1932, but even she, four years later, stated that the average age of death was 14.5 years. It has been our experience, as well as that of others, that this defect as stated is not as benign as originally supposed. As a matter of fact, it accounts for about 30% of deaths from congenital cardiac disease. Whether or not these children get into difficulty is entirely dependent on the size of the defect and the shunt flow present. As pressure in the pulmonary circuit and right ventricle increases, shunt flow decreases, but in turn irreversible damage to the pulmonary vessels develops. This girl's right ventricular pressure was elevated to 80/3 mm. Hg, which is a marked elevation. We have had, and continue to have, the unfortunate experience of having cardiac failure develop in children with interventricular septal defects that were considered "uncomplicated" right up until the time they became "complicated." Unfortunately, it is impossible for the clinician to foretell which cases may become complicated. We have found in our treatment of congenital heart disease, and particularly septal defects, that the least mortality and the best results are obtained before complications occur.

We are in perfect accord with the view that a certain number of patients with interventricular septal defects live out their life span, and wish we knew how to determine which ones would. When the right ventricular pressure reaches as high a level as was present in this girl, it is our experience that cardiac failure is imminent. It was our hope that we could correct this anomaly before cardiac failure or irreversible damage to the pulmonary circuit developed. Drs. Shapiro and Sobin's criticism, of course, is the same one that was held in reference to the closure of patent ductus arteriosus until operation was proved so successful. We are not alone in the above opinion, for if Drs. Shapiro and Sobin would care to investigate they would find that studies are being carried on at most of the cardiac centers to determine the best way to close interventricular septal defects. They could be referred to the studies of Dr. Charles Bailey, Dr. Gordon Murray, Dr. John Gibbon Jr., and Dr. Wangensteen and his group, as well as many others, all of whom have been working on this problem. So many investigators would not have concerned themselves with this defect if it were so insignificant.

Earle B. Kay, M.D.
10465 Carnegie Ave., Cleveland.

Drs. Shapiro and Sobin commented on the above letter as follows:

The over-all benignity or seriousness of ventricular defects is not the point in question. We are aware that septal defects with marked hemodynamic alterations are serious abnormalities with significantly increased morbidity and mortality. But we also affirm that, when patients with septal defects reach maturity without clinical, electrocardiographic, or radiographic evidence of heart disease, they can be said to have "uncomplicated" defects and have a fairly long life expectancy. The patient of Drs. Kay and Zimmerman fits into this category.

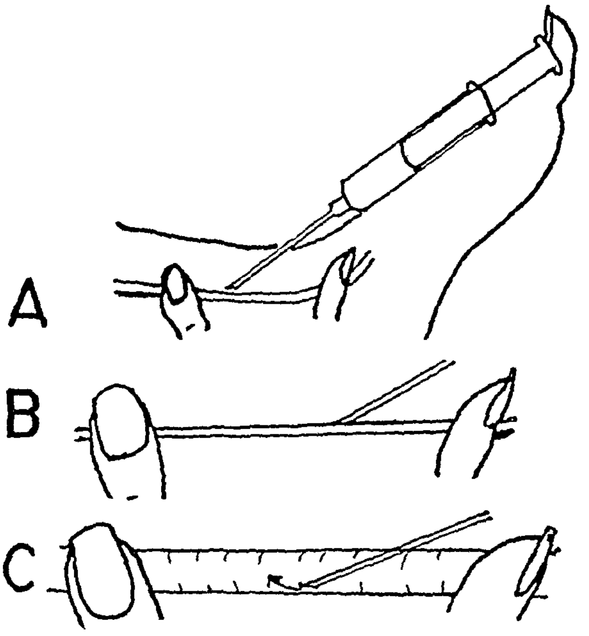
The data presented by the authors are in conflict:—"An angiocardiogram revealed a shunt between the right and left sides of the heart with visualization of the aorta within one second." Yet the data from heart catheterization showed no right-to-left shunt; the femoral arterial blood contained 17.92 vol. % of oxygen (96% saturation); and the patient was acyanotic. Contrast substance obviously cannot pass from the right to the left side of the heart without there being arterial unsaturation. Either the angiocardiographic interpretation was wrong or the blood gas data were in error. Despite their statement to the contrary, the pressure of 80/3 mm. Hg in the right ventricle with a systemic pressure of 118/74 mm. Hg is not necessarily the result of a large left-to-right shunt with accompanying increased pulmonary artery flow. This more likely may be hydraulic response of the right ventricle facing increased resistance ("head" of pressure from the left ventricle) to put blood through the pulmonary artery. Their statement that "when the right ventricular pressure reaches as high a level as was present in this girl . . . cardiac failure is imminent" is entirely unjustified. Our own experience with a variety of congenital heart lesions in 550 heart catheterizations does not substantiate their statement. There is no objective evidence that the septal defect in their patient was actually closed. We have only the statement that "check-up examination three months later revealed considerable improvement in the patient's dyspnea." No mention is made of disappearance or change in character of the murmur, and no postoperative catheterization data are presented.

We reaffirm our previous statement that to have subjected this 21-year-old woman to a previously untried operative procedure seems unwarranted.

Morse J. Shapiro, M.D.
Sidney S. Sobin, M.D.

METHOD FOR STARTING INTRAVENOUS FLUIDS IN COLLAPSED VEINS

To the Editor:—It is often necessary in the practice of medicine and surgery to start an intravenous infusion of blood or other fluids in a patient whose veins are collapsed due to shock, chronic illness, decreased blood volume, or the like. A cut-down can always be done, but this is time-consuming, and the patient may be in shock on the ward or the materials for cut-down may not be at hand. The physician thus finds himself in a situation in which intravenous fluids are urgently needed and the veins are collapsed so that he cannot get into them with a needle. I have often used the method described below, which has almost always been successful. The best location for this infusion is in the long saphenous vein over the medial malleolus at the ankle. It can be used at the wrist or at the elbow if the veins can be palpated there. The method is best suited for persons who have little subcutaneous tissue and whose long saphenous veins or other veins can be easily palpated over the underlying bone.



Technique: The fluid to be infused should be at hand. The physician palpates the collapsed vessel with the left index finger and thumb. He then takes a 5 cc. syringe containing sterile isotonic sodium chloride solution and a number 18 or smaller needle, and passes the needle through the skin and into the wall of the vein (see illustration, *A*). As the wall of the vein is pierced with the bevel up, gentle pressure is applied on the plunger (*B*). When the needle enters the lumen of the vein, the fluid enters the vein easily and distends the vein ahead of it (*C*). The left index finger occludes the vein proximal to the needle, making it easier to distend the vein. With the vein distended with isotonic sodium chloride solution, the needle is passed into the vein as far as desired. The solution usually can be easily aspirated and is blood-tinged, indicating that the needle is in the vein. The infusion set is then connected to the needle and the fluid allowed to run.

Harry J. Till, M.D.
726 Bell Bldg., Montgomery, Ala.

ALFALFA SEED DERMATITIS

To the Editor:—I read with interest the report of the alfalfa seed dermatitis by Dr. William H. Kaufman in The Journal of July 17, 1954, page 1058. About two years ago a patient of mine also had such a dermatitis several weeks after drinking a quart of alfalfa seed tea daily for his hypertrophic arthritis of the spine. It began between his fingers and on the dorsa of his hands and spread to the antecubital and axillary regions. When he stopped drinking the tea, the dermatitis promptly cleared. He has had no eruptions of any kind before or since.

G. B. Lemmon Jr., M.D.
407 Professional Bldg.
Cherry & Kimbrough St.
Springfield, Mo.

MEDICAL FILM REVIEWS

Otoscopic Cinematography of the Tympanic Membrane and Middle Ear: 16 mm, color, silent, showing time 18 minutes Prepared by Paul H. Holinger, M D, Kenneth Johnston, M D, and Richard Buckingham, M D., with the assistance of Francis Lederer, M D, and Marvin J. Tomari, M D, of the Department of Otolaryngology, the University of Illinois; Illinois Eye and Ear Infirmary, and St Luke's Hospital, Chicago Procurable on purchase ($150) or rental ($15) from the Jacques Holinger Memorial Fund, 700 N Michigan Ave, Chicago 11.

The anatomy and pathology of the ear drum as seen through the ear speculum and the otoscope are shown in this film. The normal drum membrane is first shown, and then various acute and chronic inflammatory processes, perforations, and other drum pictures are presented. These include a recent paracentesis, old perforations, serous otitis, cholesteatoma, healed perforations, and hemotympanum. In the absence of the drum, as in a large perforation, the contents of the middle ear are visualized. The photography is good, but, unfortunately, the details of the tympanic membrane as seen by the camera are not comparable to the details as seen by the examining otologist with reflected light through an ear speculum with or without magnification. For this reason the teaching value of the film is somewhat limited, since it would be difficult for the student to translate the conditions as seen in the film to the appearance of the tympanic membrane as seen on clinical examination. This film should be of interest to otolaryngologists and, with the limitations mentioned, for teaching medical students and residents.

Decompression of the Gasserian Ganglion and Posterior Root in the Treatment of Trigeminal Neuralgia: 16 mm, color, silent, showing time 23 minutes Prepared in 1954 by and procurable on loan from Robert Dean Woolsey, M D, 16 Hampton Village Plaza, St. Louis 9.

This film shows the new variation of the operation for trigeminal neuralgia that was introduced by Taarnhoj two or three years ago. Typical patients with severe trigeminal neuralgia are shown from the time of their preoperative examination to their dismissal from the hospital. The operative procedure is decompression of the sensory root, and the technique of this is shown and is supported by some drawings. One must say at the outset that the general concept of the film and the exposure of the surgical field at critical points are successfully carried out; however, there are several rather amateur features about it. One is the lack of coordination between what is being described in the diagram and the pencil that points out the diagram. There is a long dissertation while three surgeons scrub their hands, and the extreme close-up views of the operating room nurse are unnecessary. This is also true of the beginning of the operation. The fact that ligatures in muscle are cut by scissors one by one is something that the viewer would gladly take for granted. It is pointed out, but not sufficiently clearly, that there is still a little question as to whether this treatment, desirable as it is, will always cure the neuralgia. In the first place, it has only been on trial for a short time, and there already have been many recurrences. The surgical procedure shown is satisfactory; however, there should be some editing and some synchronization of the sound to the demonstrations in the diagrams. The material is good, but it is not always wisely used. This film will be of interest to general practitioners and neurosurgeons.

NEW FILMS ADDED TO A. M. A. MOTION PICTURE LIBRARY

Phase Microscopy of Normal Living Blood Cells: Part I: Peripheral Blood: 16 mm, sound, black and white and color, showing time 27 minutes Prepared in 1954 by Richard J. Blandau, M D, Quinn B deMarsh, M D, and Paul Ralph, Ph D, Department of Anatomy, School of Medicine, University of Washington Sponsored by the National Advisory Council of the National Institute of Health, United States Public Health Service. Procurable on purchase ($195) from Film Center, University of Washington, Seattle 5, or on loan ($3) from Committee on Medical Motion Pictures, American Medical Association, 535 N. Dearborn St, Chicago 10

The purpose of this motion picture is to compare the morphological appearance of the various cellular elements of peripheral blood as they appear in a Wright stained preparation and in the living state as observed with the phase-contrast microscope. The comparisons involve the neutrophils, eosinophils, basophils, lymphocytes, monocytes, blood platelets, and erythrocytes. The stained cells are shown first, and this is followed in each case by views of the living cell, showing its morphology and motility. This film is a fine demonstration of the possibilities of the phase-contrast microscope in the study of peripheral blood. No other method as simple as this one would be quite as suitable for the study of living, unchanged cells. However, it would have been desirable for the commentator to mention briefly in a sentence or two what phase microscopy is, and a pointer would have helped identify certain structures that are mentioned but that not every viewer will readily see. The film is recommended for medical students, medical technologists, students of cytology, and physicians in general.

BUSINESS PRACTICE

HOW SAFE IS YOUR INCOME?

James R. Williams, Chicago

Previous articles in THE JOURNAL have pointed out the necessity for the physician to organize his financial program, utilizing the service of the insurance salesman, the lawyer, and the banker. In planning his estate—present as well as future—the physician should provide against hazards that can affect his financial program and his career with disastrous results.

PROTECTING AGAINST LOSS OF INCOME

There are four dangers that confront everyone pursuing an active productive life: (1) premature death—dying too soon, (2) economic death—living too long, (3) disability due to an accident, and (4) disability due to a disease. Of all persons, no one is more conscious of these hazards than the physician. Any practitioner can readily recall from his daily rounds innumerable cases that fit each of these categories. Associated as he is in a profession intimately concerned with the hazards incident to day-to-day living, he can quickly agree that these four risks can affect anyone. They involve all classes, all income levels, and frequently, with the exception of economic death, strike without warning. The first two, dying too soon and living too long, can be prudently provided for through the mechanics of life insurance and intelligent financial planning. The latter two, an accident or a sickness, can strike down a person in his prime, rendering him helpless for a day or a lifetime.

Income Security.—Accident and health insurance providing monthly benefits to disabled persons is often called primary insurance. It insures the basis of family and personal security, the income. An income producer must provide funds for the basic necessities of life—food, clothing, and shelter. When a producer is unable to furnish such funds from his own efforts, other sources must be found to fill the void. Let us consider the nature and suitability of other principal sources.

Investment income can be used during periods of disability if one has been fortunate enough to accumulate sufficient investment capital before disability strikes. Yet the very uncertainty of property itself and the variables of the market do not guarantee fluctuation-proof income. Often capital has to be drawn on, which further depresses the value of monetary returns from investments, and, if capital funds are used in this way, it then becomes necessary to restore the investment to its previous level. Insurance, unlike other forms of property, is a steady, certain source of income, free from economic peaks and valleys.

Director of Public Relations, Health and Accident Underwriters Conference.

Earning Ability.—The young physician just entering private practice may be already responsible for some substantial obligations. He may have had to borrow to complete his training, as well as for equipment necessary to practice, office space, and other necessities for starting a practice. In such a situation his ability to develop his practice and in turn see his patients, make his home calls, and complete his hospital rounds depends on his health. Most young physicians are not as well off as their patients, as far as being financially protected against a sickness or disability. Currently five out of eight Americans have some form of insurance against the costs of hospitalization. One out of two have surgical coverage. One out of four have medical insurance. More than half the working population have insurance against loss of income due to a disability. The salaried physician usually has a financial cushion in case of an illness through a sick leave plan or income insurance program set up by the employing organization, but the physician in private practice must furnish his own security program.

How much is a physician worth in earning power? The average or mean net income from medical practice for physicians in 1949 was $11,058, according to a survey released by the American Medical Association's Bureau of Medical Economic Research. Round out this figure to $12,000 and take young Dr. Jones, age 30, just starting his practice, as an example. He can look to an earning span of 420 months—or 35 years. In that period with an average income of $1,000 per month, Dr. Jones will have earned $420,000 by the time he reaches 65. An accident of two years' duration would mean a loss in income of $24,000. Even being unable to work for two months would mean a $2,000 earning loss.

PLANNING ADEQUATE COVERAGE

Because of the fundamental principle of disability income insurance, as much care and thought should be put into its purchase as into other forms of personal insurance and factors in estate planning. Basically, accident and health insurance is an indemnity form of coverage. For payment of timely premiums, the insurer (company) agrees to pay the insured (policyholder) stated benefits in event of a sickness or accident occurring during the term of the policy in partial replacement of the resulting lost income. There are many variations of disability policies, some of which are extremely popular today. Hospital and medical insurance policies also provide indemnity for loss by accident or sickness but with the indemnity related to medical expenses rather than to the loss of business time. Accident and health insurance is available in the United States from more than 600 companies. In no other branch of insurance is there such homogeneity of type of company or coverage. While more than 70% is written by life insurance companies, casualty insurers are extremely active in the field. Much of the business is sold through company or broker representatives, but there are very fine companies that provide excellent policies and service without the use of agents.

ANALYZING NEEDS

What kind of an accident and health policy should a physician have? That depends on how much he needs, what his responsibilities are, how long he wants to "self-insure," and other factors. Because it should be integrated with other insurance and investments, it is impossible to make specific proposals that are applicable in all cases. In planning a program the first step should be for the physician to figure what expenses he would have to meet if he were disabled or, to put it another way, how much would be needed to pay the normal living costs of food, house payments, and other similar items. In addition, there is often the possibility of further costs as a result of hospital confinement. In determining the disability income needed it should be kept in mind that accident and health insurance benefits are not subject to income tax.

After initial needs are determined, types of policies can then be considered. At this point a good agent can be helpful. He usually has a variety of contracts in his portfolio so a program can be tailor-made to fit the situation of the person. An agent friend of mine has made it a specialty to program the insurance needs of clients. He recently reviewed the plan of one policyholder, Dr. Johnson, a 42-year-old internist, who has been practicing medicine for 14 years and is netting around $20,000 a year. A $15,000 mortgage and other debts in the neighborhood of $2,000 remind him of the need for keeping his practice active to feed and clothe a family of four. The doctor realized that a practical insurance program should include some good disability policies. Today, he has five policies that will pay a total of $700 the first month of total disability, then $800 a month for the next five years. For the next three years he gets $600 monthly and after eight years he will be paid $400 a month until he is 65, when his life insurance retirement program starts. If he is in the hospital he gets an additional $650 a month for three months, then $200 monthly for three more months. His program includes commercial and noncancellable insurance and a medical society group plan. All of this is in addition to his life insurance, which contains a substantial cash value that may be borrowed in an emergency. Incidentally, he is protected on his life insurance payments with a waiver of premium, meaning that after six months' total disability his insurance company keeps the policy in force for the duration of disability without further premium payments. The doctor's program, while adequate, does not replace his total current income. It is neither practical nor desirable for an insurance plan to replace the entire income as many luxury-type expenses would not be incurred by the disabled. Secondly, and more important, insurance is not intended to replace total loss whatever the risk. Through the coinsurance principle the policyholder shares a part of the risk, which helps obviate the moral hazard in disability insurance, a factor highly important in such a subjective field as health.

Types of Coverage.—There are two distinct types of accident and health contracts. A noncancellable or guaranteed renewable type can carry a policyholder up to a certain age, say 60 or 65 years. The company may neither cancel the policy nor refuse to renew it so long as premiums are paid when due or within the grace period. It is somewhat more expensive than the cancellable contract. The cancellable type falls into two categories. One type may be canceled by the insurer without prejudice to any pending claim by written notice to the insured and the return of the pro rata premium. The other type may not be canceled during the term for which the premium has been paid and accepted by the company, but the insurer may refuse to renew on any premium due date. Both are good policies and serve useful purposes. A noncancellable policy is often used as the base for a disability insurance program. To it can be added a commercial policy paying a monthly indemnity of two years or five years for disabling sickness, with lifetime benefits for total disability from accidental injury. What to buy depends largely on the needs and desires of the physician.

Group Disability Plans.—Many national and state medical associations have set up group disability programs for their members. One society's plan pays $75 weekly indemnity from the 16th day of disability for sickness and the same for total disability from an accident. Payments start from the first day of disability if due to an accident. When or if the disability is not total but partial in nature, the policyholder is paid one-half of the benefit for as long as 26 weeks. This society's program pays an additional $10 a day for hospital confinement plus necessary hospital charges up to $100. Accidental death and dismemberment benefits may be purchased as well. The association group type of policy follows the theory of group insurance. It is a floor or basic level of protection. It offers no flexibility and is intended to be woven into a broader protection program. In most cases the company reserves the right to cancel but only by canceling the entire group.

The value of accident and health insurance is much the same as any other risk protection: You are conscious of its real importance only when you have reaped its benefits. Insurance is not "cheap" but to have it is much less expensive than to be without it, especially when it is hard to get. It is a necessity, especially for the physician, because it is the only entirely satisfactory and dependable way to provide a certain income when personal earnings are cut off by disability.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Disease Aspect of Epidemic, Abacterial (Transmitted by Ticks?), Virus Conditioned Meningo-Encephalomyelitis (1953). F. Lasch and E. Moritz. Wien. klin. Wchnschr. 66:436-440 (June 25) 1954 (In German) [Vienna, Austria].

In 1949, when Lasch and Moritz first reported a recurring aseptic infectious meningitis with high fever at the onset and with recovery and complete normalization of the cerebrospinal fluid after a prolonged course of many weeks, they suspected that the infection was caused by an unknown virus. An epidemic outbreak of the same disease in 42 males and 22 females between the ages of 15 and 70 years was observed in 1953. The first cases occurred at the end of April and the beginning of May; the peak of the epidemic was reached at the end of July, and it gradually subsided until October. The patients had fever for four to five days; the temperature then came down to normal for three to seven days; it rose again up to 102.2 F for about 20 days and gradually returned to normal. The lungs and the heart were normal. The spleen and occasionally the liver were enlarged. Circulation and blood pressure were normal; there was bradycardia, and in many patients myocardial impairment was demonstrated by the electrocardiogram. Cardiac decompensation did not take place, and the electrocardiogram became normal on recovery. Ophthalmologic examination revealed papillitis without subjective disturbances of vision in 50% of the patients. Signs of focal nephritis were observed in the urine of many patients. Some patients had hepatorenal symptoms with increased urobilinogenuria, traces of bilirubin in the urine, increased serum bilirubin, positive Takata reaction and potassium sulfate test, shortening of the Weltmann coagulation band and a positive galactose test. Electrophoresis in the serum showed definite reduction of proteins with increase in alpha, beta, and gamma globulins without hypoproteinemia. There were neurological signs of meningitis with corresponding dulness of the sensory apparatus in patients with high fever. Complete flaccid paralysis of upper or lower extremities, occasionally with pyramidal signs, was observed in six patients. Three patients had definite encephalitic symptoms, such as central excitation, nystagmus, vertigo, temporary paresis of the facial and hypoglossal nerves. Lumbar puncture revealed increased pressure and increased albumin in the fluid, and the number of cells were increased for 6 to 12 weeks. The duration of the disease varied from 40 to 60 days. Complete recovery occurred in all patients, the cerebrospinal fluid was restored to normal, and there were no recurrences. Of the 64 patients, 21 definitely stated that they had been bitten by ticks, and in an additional 32 patients there was the possibility that they too had been bitten by ticks. The castor bean tick (Ixodes ricinus) was believed to have transmitted the virus that was demonstrated by the ability of the patients' serums to fix complement with the antigen prepared from a strain isolated from patients with the same disease who lived near the Austrian border in the Slovenian province of Yugoslavia. The incubation period varied from 10 to 16 days. The virus that caused the meningoencephalomyelitis belongs to the same group of viruses as the looping-ill virus and the viruses isolated from outbreaks of tick encephalitis in man in Czechoslovakia and in Russia.

Subclinical Forms of Tuberculous Meningitis. A. Gentili and A. Paci. Minerva pediat. 6:265-275 (April 30) 1954 (In Italian) [Turin, Italy].

Gentili and Paci state that early diagnosis of tuberculous meningitis is difficult because the disease frequently differs from the classical picture in its course. Tuberculous meningitis may have an intermittent course during which periods of violent symptoms alternate with periods of remission that simulate a complete recovery. The condition may be subacute with a slow onset and symptoms suggesting a cerebral tumor. There are also oligosymptomatic forms and forms with an atypical course. Among the last named is meningitis that heals spontaneously and allergic tuberculous meningitis. Early diagnosis of tuberculous meningitis can be made only through studies of the spinal fluid. A greater number of early diagnoses can be obtained by performing a spinal puncture in patients who are known to have tuberculosis and in whom there is evidence that the process might extend. This "control" spinal puncture in these patients is the best means of diagnosing inflammation of the meninges before the clinical signs become apparent. Early and adequate therapy can thus be instituted, and this may prevent the onset of the clinical signs and bring about recovery before the nervous system becomes involved.

Perforation of the Interventricular Septum: Report of Three Cases with Ante-Mortem Diagnoses. A. A. Goetz and A. N. Gropper. Am. Heart J. 48:130-139 (July) 1954 [St. Louis].

Perforation of the interventricular septum after a recent myocardial infarction was diagnosed before death in one man and two women. The guide to the diagnosis was the sudden appearance of a harsh systolic murmur over the precordium, lower sternum, or apex. A review of the literature revealed 75 cases of ruptured interventricular septum after infarction, in only 30 of which the diagnosis was made before death. Of 145 recent myocardial infarctions observed in 1,292 consecutive necropsies performed at Mount Zion Hospital in San Francisco, between 1940 and 1951, rupture of the heart occurred in 14, involving the left ventricular wall in 11 and the interventricular septum in the authors' three cases. The area of infarction with involvement of the septum may extend from either the anterior or the posterior walls. The advent of the rupture of the interventricular septum is heralded clinically by a sudden decline of the patient's condition, evidenced by pain, tachycardia, dyspnea, nausea, vomiting, signs of right and/or left-sided heart failure and shock. It has been difficult, so far, to establish an electrocardiographic pattern that would be helpful in substantiating the diagnosis of a ruptured interventricular septum. In two of the authors' patients, in serial tracings after the occurrence of perforation, right bundle branch block patterns ensued. This may be interpreted as reflecting sudden development of right ventricular strain. Several other workers commented that the pattern of posterior infarction (Q_3-T_3 inversions and S-T_3 elevations), combined with diagnostic signs of infarction in the precordial leads point to septal infarction extending from the anterior to posterior ventricular walls. Tracings showing prolonged QRS complexes with a pattern resembling right bundle branch block and several of left bundle branch blocks were described. QS deflections with abnormal elevation of the S-T segments in the right precordial leads of the electrocardiograms displaying normal interventricular conduction were considered fairly reliable evidence of acute septal infarction. Two of the authors' patients had posterior infarctions; complete and variable degrees of auriculoventricular block and finally auricular fibrillation developed in one, and a nodal arrhythmia was observed in the other. The more frequent disturbance of atrioventricular conduction and rhythm in cases of posterior infarctions is best explained by the fact that the blood supply to the atrioventricular node is derived from a branch of the posterior coronary artery.

The place of publication of the periodicals appears in brackets preceding each abstract.

Periodicals on file in the Library of the American Medical Association may be borrowed by members of the Association or its student organization and by individual subscribers, provided they reside in continental United States or Canada. Requests for periodicals should be addressed "Library, American Medical Association." Periodical files cover 1945 to date only, and no photoduplication services are available. No charge is made to members, but the fee for other borrowers is 15 cents in stamps for each item. Only three periodicals may be borrowed at one time, and they must not be kept longer than five days. Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Endomyocardial Fibroelastosis: A Study of 30 Cases. W. R. Halliday. Dis. Chest 26:27-40 (July) 1954 [Chicago].

Of 30 cases of endomyocardial fibroelastosis (diffuse or focal thickening of the endocardium and the subendocardial myocardium, consisting predominantly of fibrous and elastic tissue), 29 were observed in children, and one in a 20-year-old man. In 16 patients, death resulted from an associated cardiovascular anomaly. Four patients died of intercurrent illness without evidence of their cardiac disease. One died during an attempt at surgical correction of the physiological anomaly, and, in the other nine, death was the direct result of endomyocardial fibroelastosis. Since the 30 cases were detected in the course of five years, endomyocardial fibroelastosis is not to be considered a rare disease when sought. It is primarily an anomaly of the subendocardium, with secondary vascular and tertiary myocardial changes, leading typically to compensatory myocardial hypertrophy and occasional dilatation. Although endomyocardial fibroelastosis is clinically a protean disease, three major groups may be separated. Patients in the first group die either before any cardiac abnormality is suspected or after a short typical steadily downward course. Patients in the second group respond to good medical management over a period of months or years after an initial attack of congestive failure in infancy, and a few appear amenable to surgical improvement. Patients in the third group carry their fibroelastosis well beyond infancy, and it is only logical to believe that a very few may live for a prolonged period with an entirely normal life. There was no evidence to exclude the possibility that fibroelastosis may be secondary to other abnormalities in certain cases. Contrary to Johnson's theory that anoxia plays a major part in the production of fibroelastosis, at least in three of the author's cases there seemed no conceivable cardiovascular reason for such anoxia. All three showed diffuse endomyocardial fibroelastosis with patent foramen ovale or auricular septal defect and no other cardiovascular anomaly. In two of these all chambers and valves were involved and, in the third, all chambers and the aortic valve. In 17 cases fibroelastosis was associated with cardiovascular anomalies and, in 11, with congenital noncardiovascular anomalies. For this reason and since no evidence was observed of an inflammatory causation or of collagen or glycogen storage abnormality, the author considers endomyocardial fibroelastosis to be an "idiopathic" congenital anomaly. Endomyocardial fibroelastosis was associated with coarctation in five of the author's cases, with hypoplasia of the left ventricle in two, and with hypoplasia of the left auricle in one.

Postinflammatory "Tumors" of the Lung: Report of Four Cases Simulating Xanthoma, Fibroma, or Plasma Cell Tumor. W. O. Umiker and L. Iverson. J. Thoracic Surg. 28:55-63 (July) 1954 [St. Louis].

Four postinflammatory "tumors" of the lung are described and compared with three similar ones from the literature. Clinically, the lesions are characterized by a history of infection of the upper or lower parts of the respiratory tract with attending mild symptoms that may be neglected for years and roentgenograms suggestive of tuberculomas or well-circumscribed neoplasms. Morphologically, they closely simulate true tumors, such as xanthomas, xanthofibromas, neurofibromas, fibromas, vascular tumors, or plasma cell tumors. The most important anatomic criteria that should arouse suspicion of a pseudotumor resulting from an inflammatory process are generous numbers of inflammatory cells within the mass, maturity of the fibroblastic components, lack of mitotic activity, and remnants of preexisting parenchyma throughout the mass in the form of elastic fibers. Surgical removal of the mass constituted cure in all patients in whom it was performed.

Bronchoscopy and Primary Tuberculosis: Statistical and Clinical Findings. S. Taronna and C. Zucconi. Minerva medica 45:1261-1265 (May 2) 1954 (In Italian) [Turin, Italy].

Roentgenograms and bronchoscopic findings of 42 children with primary tuberculosis were studied in an attempt to determine the relationship between tuberculosis and the bronchial tree, namely, eventual bronchial alterations induced by the presence of enlarged lymph nodes and the effects of these alterations on the respiratory function. The roentgenograms revealed adenopathy and parenchymal shadows in 16 patients, and adenopathy without parenchymal shadows in 26. Bronchoscopy revealed that the primary lesions were accompanied by severe alterations of the broncial tree in most of the first 16 patients; in 10 of them inflammatory bronchial stenosis was present in the bronchus that corresponded to the parenchymal shadow. In most of the children whose roentgenograms did not reveal parenchymal shadows the bronchi were either normal or presented slight signs of bronchitis without stenosis and with a normal bronchial lumen. These bronchoscopic findings indicate that often the parenchymal shadow of the roentgenograms of patients with primary tuberculosis is due not to an allergic reaction but to hypoventilation caused by endobronchial or extrabronchial stenosis of the bronchus in the involved area. The authors feel that many chronic bronchial conditions in adults may be the result of previous atelectatic lesions caused by the primary tuberculous infection. They feel that bronchoscopy in patients with primary tuberculosis is important not only from the diagnostic but also from the therapeutic standpoint. In stenotic bronchitis in these patients, the bronchoscopist in a short time can render patent a bronchus that is intrinsically stenotic with proper local medication. He can also control those specific vegetations that, when of long standing, resist all forms of treatment.

The After-History of Pulmonary Tuberculosis III. Minimal Tuberculosis. N. S. Lincoln, E. B. Bosworth and D. W. Alling. Am. Rev. Tuberc. 70:15-31 (July) 1954 [New York].

Of 448 residents of the district of the Hermann M. Biggs Memorial Hospital in Ithaca, N. Y., who between 1937 and 1947 were observed to have minimal pulmonary tuberculosis, 134 were considered to have active disease and 314 arrested minimal tuberculosis. There was an increase in the annual incidence of new cases of arrested minimal tuberculosis, but no change in the annual incidence of new cases of active minimal tuberculosis. The median age of the patient at the time of diagnosis rose significantly. The patients were followed until 1951, and their clinical course was assessed at yearly intervals. Analysis of the follow-up data showed that (1) one-fifth of the persons with active disease at the time of diagnosis could be expected either to be dead of tuberculosis or to have active disease 10 years later; (2) one-eighth of the persons who had arrested disease at the time of diagnosis could be expected either to be dead of tuberculosis or to have active disease 10 years later; (3) there was a steady decline in the relapse rate as the duration of arrest of disease increased; and (4) there was a similar decline in the remission rate as the duration of active disease increased. There was a strong tendency for newly diagnosed, active minimal tuberculosis to become arrested (high remission rate) and a moderate tendency for newly arrested disease to become active again (moderate relapse rate). The weakening of these tendencies with the passage of time is consistent with certain pathological and bacteriological aspects of the necrotic lesion. When a person with active minimal disease has a "spread," it is because a necrotic area has disintegrated relatively early after its formation. Similarly, when a person with arrested disease experiences a relapse, the necrotic focus has undergone a delayed integration and extension. The longer the necrotic lesion remains intact, the smaller the probability of its containing viable organisms; hence, the less hazard of relapse. The observed decline in the relapse rate may reflect a decreasing tendency of the necrotic lesion to undergo dissolution. It is not a hard and fast rule, however, that in minimal tuberculosis relapse is impossible after five years of proved clinical arrest, for there are occasional exceptions. The authors saw a relapse occur in a patient with minimal disease who had had stable yearly chest roentgenograms over a period of 13 years. The marked and steady decline of the remission rates that was observed as the years of unremitting disease increased may be explained by the establishment of advanced disease with open cavity becoming more and more likely as the duration of active tuberculosis increases.

The Continuous and Concurrent Use of Streptomycin, Para-Aminosalicylic Acid, Isoniazid Plus Early Surgery in the Treatment of Tuberculosis. A. R. Allen, G. E. Marcy and J. K. Yu. Dis. Chest 26:41-46 (July) 1954 [Chicago].

One hundred one patients with pulmonary or extrapulmonary tuberculosis were given streptomycin, *p*-aminosalicylic acid, and isoniazid concurrently and continuously from admission to the hospital to discharge. The adults received 1 gm. of streptomycin sulfate intramuscularly twice a week and children aged less than 12 years received 0.5 gm. of streptomycin intramuscularly twice a week. Isoniazid was administered to all age groups on the basis of 4 mg. per kilogram of body weight, adjusted to the nearest 50 mg. tablet and also adjusted as the patient gained weight. A dose of 10 gm. of sodium *p*-aminosalicylate in solution was given daily to adults, and for children the dosage was scaled down according to their weight. When the results obtained in these patients with the combined use of streptomycin, isoniazid, and *p*-aminosalicylic acid, were compared with those obtained by Pitts and co-workers in 99 patients with pulmonary tuberculosis treated with 150 or 300 mg. of isoniazid daily combined with 2 gm. of streptomycin every third day (*J. A. M. A.* 152:886 [July 4] 1953), the three drugs used concurrently and continuously had a greater therapeutic value with a higher conversion rate and the emergence of fewer resistant strains of organism. It was possible to maintain this regimen of therapy in a high percentage of patients because of the few toxic reactions. Surgery after four to six months of this three drug regimen is not only safe, but it is desirable because it prevents the development of resistant organism. Twenty thoracotomies with resection were performed in patients with pulmonary tuberculosis, five operations in patients with genitourinary tuberculosis, and five surgical interventions in patients with involvement of bones. All the patients had negative tests for tubercle bacilli after surgery, and there was no surgical death, no spread or reactivation of disease on the opposite side, and only one bronchopleural fistula, which was closed with primary suture, and a small thoracoplasty. Of the 101 patients, 5 died, 36 remained in the hospital, and 60, who received an average 194 days' treatment with streptomycin, 161 days' treatment with *p*-aminosalicylic acid, and 185 days' treatment with isoniazid during an average of 207 days in the hospital, were discharged and returned to their previous occupations, regardless of the amount of activity these occupations require. These patients did now show roentgenologic changes, maintained their weight at time of discharge or gained, and some have already had negative gastric cultures as outpatients.

Acidosis and Diabetic Coma. R. Rodríguez and R. E. Casarín. Rev. invest. clín. 6:21-64 (Jan.-March) 1954 (In Spanish) [Mexico, D.F., Mexico].

From 1947 to 1953, 128 cases of acidosis or of diabetic coma were observed in 99 patients in the Hospital de Enfermedades de la Nutrición of Mexico City. Lack of insulin or insufficient doses of the drug, alone or in association with dietetic transgressions, were most frequently the causal factors. Eighty-four adults had their first admission to the hospital when they were in coma. Fifteen patients were children or young adults, four of whom had had acidosis or had been in coma twice; one each, three and four times, respectively, and two, seven times. The main symptoms, associated with somnolence, stupor, or unconsciousness of various degrees, were dehydration and Kussmaul's respiration. Diabetic acidosis in mature adults and in the elderly often simulated uremia, alcoholic or barbiturate intoxication, cerebral trauma, or cerebral hemorrhage. A definite diagnosis was always feasible by demonstration of glycosuria and acetonuria. Hyperglycemia, high blood urea, hypotension, and low carbon dioxide combining power were observed in all cases. Treatment consisted of immediate administration of insulin and saline solution intravenously. The dose of insulin varied with the age of the patient, the degree of acidosis, and the duration of coma prior to treatment. Intravenous infusion started immediately after administration of the first dose of insulin. The total quantity administered varied with the age and general condition of the patient and the degree of dehydration. Periodic examinations for glycosuria, acetonuria, glycemia, blood urea, and the carbon dioxide combining power were done in the course of the treatment. The course of acidosis and diabetic coma was severer and of longer duration and the death rate higher in patients with no previous treatment. Nineteen patients in the group with no previous treatment and three in the group with treatment died. Of the 22 patients who died, the duration of coma before admission of the patient to the hospital was five days in 1 patient, four days in 2, three days in 2, two days in 6, and one day in 4. The duration of coma prior to the treatment could not be ascertained in seven patients. Four patients died between the ages of 5 and 40 years and 18 between the ages of 41 and 80. Nineteen deaths were in a group of 38 patients who were in deep coma and 3 in the group of 13 patients who were in coma but responded to stimulation. Nine deaths took place in the group of 39 patients with carbon dioxide combining power of the blood of less than 25 vol. % and 13 in the group of 89 with carbon dioxide combining power of between 25 and 40 vol. %. The diastolic pressure of patients who died was under 70 mm. Hg. The highest figures of blood urea among the patients who died and those who survived were of 332 and 108, respectively. Complications observed at necropsy were: myocardial infarction in four patients, cerebral hemorrhage in two, gastrointestinal hemorrhage in two, severe pyelonephritis in one, acute meningitis in one, intestinal occlusion in one, and bronchopneumonia from aspiration of vomitus in two. The authors point out the prognostic significance of acute dehydration in acidosis or diabetic coma as possible cause of renal dysfunction and consequent anuria.

Chronic Barbiturate Intoxication: Further Studies. H. F. Fraser, H. Isbell, A. J. Eisenman and others. A. M. A. Arch. Int. Med. 94:34-41 (July) 1954 [Chicago].

Fourteen men in good health who were addicted to barbiturates volunteered for an experimental study of chronic barbiturate intoxication. Secobarbital was administered orally in a dose sufficiently large to maintain continuous, moderate to severe intoxication for 32 to 48 days and was then withdrawn abruptly. Results showed that chronic barbiturate intoxication is a dangerous condition and that it resembles chronic alcoholism. Persons taking large amounts of barbiturates are confused, are unable to think clearly, have very poor judgment, and display pronounced emotional lability. The physician should suspect chronic barbiturate intoxication in a person who behaves like one intoxicated with alcohol but who has no odor of alcohol on the breath. Observations made in the 14 patients confirmed those in 5 patients reported previously by the authors that there is a considerable range among persons with respect to the amount of secobarbital required to produce equivalent degrees of intoxication. The range was 0.9 to 2.2 gm. daily in the 14 patients. A definite abstinence syndrome developed after abrupt withdrawal of barbiturates. It was characterized by disappearance of signs of intoxication, weakness, tremor, great anxiety, anorexia, nausea and vomiting, rapid loss of weight, fever, difficulty in making cardiovascular adjustments on standing, convulsions of a grand mal type, and/or psychosis that resembles alcoholic delirium tremens. Psychological tests conducted during addiction, withdrawal, and recovery in 11 patients revealed that barbiturate addicts have a severe impairment of coordination, as reflected by increased reaction time and a decreased ability to maintain a "set" or readiness to respond. During chronic barbiturate intoxication, 98% of the electroencephalograms were decidedly abnormal with mixed rhythmic fast and slow activity predominating, most conspicuously in the frontal and parietal tracings. Very dramatic and abrupt changes in electroencephalograms occurred during the acute abstinence period with paroxysmal activity in the course of the second and third day; during the fourth to eighth day paroxysmal activity decreased, while continuous slow or random delta activity became more prominent. By the ninth day of abstinence, more than 72% of the electroencephalograms were classified as "normal." Rise in uric acid followed by elevation of the nonprotein nitrogen levels was demonstrated by biochemical studies subsequent to grand mal convulsions after abrupt withdrawal of barbiturates; it was not considered specific to this withdrawal but would occur after convulsions from any cause.

Alimentary Tract in Disseminated Scleroderma with Emphasis on Small Bowel. H. L. Abrams, W. H. Carnes and J. Eaton. A. M. A. Arch. Int. Med. **94:**61-81 (July) 1954 [Chicago].

The occurrence of scleroderma with intestinal involvement is reported in five women between the ages of 36 and 52, and in a 37-year-old man. In three of these patients the disease was of relatively long duration, and the development of visceral symptoms, other than dysphagia, was late. In the other three the course was far more rapid, two dying within two years after the onset of the disease. In this second group, dysphagia was a later manifestation than abdominal pain or distress, anorexia, nausea, and vomiting, and in one patient dysphagia was entirely absent. The onset of epigastric distress was accompanied by anorexia, and thereafter weight loss and inanition developed. Skin changes were present in all six patients, the type of change varying with the stage of the disease. There was no correlation between the extent of skin change or skeletal disability and the degree of intestinal involvement. In one patient, the appearance of the skin was an insignificant feature and failed to suggest the diagnosis. All six patients had the Raynaud phenomenon, and in three it marked the onset of the disease. In general, no significant clinical evidence of pulmonary involvement was present. The most interesting laboratory finding was the demonstration of a flat glucose-tolerance curve in the two patients with the most rapid course. The very slow rise in four hours from 62 to 80 mg. per 100 cc. and in three hours from 77 to 107 mg. per 100 cc., respectively, suggested that glucose was not being normally absorbed. Roentgenologically, pronounced dilatation was the most striking abnormality in the small intestine. Although the bolus of barium should have been an effective stimulus for peristaltic waves, peristalsis did not occur or was of diminished amplitude, and the colon remained distended for a considerable period of time. Similar abnormalities were present in the esophagus. The normal diameter of the jejunum is 2 to 3 cm., but in five patients loops with a diameter of 5 cm. or more were demonstrable. The proximal small intestine showed far greater evidence of involvement than the ileum, although in two patients significant dilatation of the ileum was present. Hypomotility of the colon was present in all but one of the patients. Even in the presence of profuse diarrhea, transit time was markedly prolonged. Involvement of the third portion of the duodenum was a prominent feature. Sacculation of the colon was observed in one patient. The significant radiological changes in peristalsis, motility, tonus, and caliber appear to be explicable by a distinctive structural defect in the muscular coat of the alimentary tract. Cortisone and corticotropin were effective in producing temporary improvement concerning skin, joints, and the Raynaud phenomenon, and in one patient a sustained remission was initiated. In only one patient was there evidence that the course of the intestinal involvement was influenced.

Technique of Peritoneoscopy: Liver Biopsy, Angiocholegraphy, Radiomanometry Under Peritoneoscopic Control. A. Fourès, P. Ricordeau and J. Caroli. Presse méd. **62:**929-933 (June 16) 1954 (In French) [Paris, France].

Peritoneoscopy has been used routinely by the authors for more than four years in patients with hepatobiliary conditions in whom a diagnosis could not be established by clinical, biological, or radiological methods of investigation. Access to the peritoneal cavity is obtained by the use of a special trocar introduced under light local anesthesia. A pneumothorax apparatus with communicating vessels and a water manometer permitting constant control of the gas is used for insufflation. Contact between the apparatus and the abdominal cavity should be maintained throughout the examination so that if a sudden contraction by the patient leads to an increase in the intraperitoneal gas pressure, some of the gas can flow back into the apparatus, thus relieving the pressure and lessening the danger of parietal emphysema. Relaxation of the contraction will be followed automatically by the return of the gas to the peritoneal cavity. A special peritoneoscope with independent optical and lighting systems carried in a cannula only about 5 mm. in diameter was designed by one of the authors (A. F.) and is used by them. Its small caliber facilitates its introduction into the peritoneal cavity and the sliding arrangement makes it possible to use the lighting system as a separator to push aside omental segments obstructing the view, or to raise the liver, for instance, for better inspection of the gallbladder. Peritoneoscopy requires no special preparation, and, when the authors' peritoneoscope is used according to their directions, it is normally painless, except for the discomfort caused by the pneumoperitoneum. Some pain, however, may be felt during insufflation if adhesions are present, but it will usually subside spontaneously if the distention is carried out very slowly. The site of introduction should be chosen in accordance with the clinical problem to be resolved, and, for best results, the optical system should be kept at some distance from the object of the investigation. Peritoneoscopic examination can be supplemented by puncture biopsy of the liver, angiocholegraphy, and radiomanometry of the biliary passages, all of which can be performed with greater accuracy and safety under the visual control provided by the peritoneoscope. The information that can be obtained from these supplemental procedures when they are carried out according to the technique and with the precautions described by the authors may suffice to establish a diagnosis in difficult cases when other diagnostic methods have failed.

Shoulder Pain and Coronary Heart Disease. C. H. Scheifley. Proc. Staff Meet., Mayo Clin. **29:**363-368 (June 30) 1954 [Rochester, Minn.].

Periarthritis of the shoulder that follows myocardial infarction apparently does not differ fundamentally from that resulting from a great number of other causes, or from that with no apparent cause. Periarthritis is pain and stiffness in the shoulder. It includes the three forms described by Coventry: (1) pain with definite but minimal stiffness, (2) pain with pronounced stiffness (frozen shoulder), and (3) the shoulder-hand syndrome. The mechanism of periarthritis associated with coronary heart disease has not been wholly agreed on. Some investigators support the "reflex" theory, whereas others adhere to the "disuse" theory. Although the factor of disuse (rest in bed) is obvious in the average patient recovering from myocardial infarction, it is difficult to ignore the truly remarkable reflex disturbances that can be produced by the heart. Sweating and flushing of the left side of the face and even increased prominence of the left eye and dilatation of the left pupil have been described in association with angina pectoris. Raynaud's phenomenon has been noted in one or more fingers of the left hand during angina. Hyperesthesia of the skin and aching in the thoracic wall and the shoulder and arm are commonly observed in patients who have coronary heart disease. Because these reflex disturbances appear to be related to cardiac pain, it becomes increasingly difficult to decide whether the initiating factor is the reflex disturbance followed by disuse or disuse followed by reflex disturbances. The tendency for periarthritis to occur predominantly on the side corresponding to the radiation of the cardiac pain favors the reflex theory. Regardless of the nature of the initiating event, changes of a reflex nature and those resulting from disuse are both present once the process has begun. The onset of joint pain discourages use of the extremity, which in turn is followed by both reflex and atrophic changes. Yet this does not indicate which event came first. In an attempt to illustrate this unsettled state of thinking, Scheifley questioned 50 physicians whose specialties bring them in contact with patients suffering from shoulder and shoulder-hand difficulties as the result of coronary arterial disease. The majority were uncertain as to the initiating event, but almost equal support of the two theories was given by those who expressed an opinion. More evidence seems to favor reflex changes as the initiating event.

The Clinical Picture of Pulmonary Stenosis (Without Ventricular Septal Defect). E. G. Dimond and T. K. Lin. Ann. Int. Med. **40:**1081-1124 (June) 1954 [Lancaster, Pa.].

The clinical findings in 20 patients with pulmonary stenosis in whom the diagnosis was established by cardiac catheterization were correlated in an attempt to draw an accurate clinical picture of this condition. The presence of this common congenital lesion, which can usually be diagnosed by means of auscultation, electrocardiography, and fluoroscopy, should always be suspected in patients with (1) a harsh systolic murmur, maximal along the second, third, or even (infrequently) the fourth inter-, space, with a pulmonary second sound that may vary from normal to reduplicated or diminished; (2) an electrocardiogram that may vary from normal to one indicative of right ventricular hypertrophy; and (3) x-ray and fluoroscopic findings that may be normal or may show a prominent main pulmonary segment with quiet lung shadows. The prognosis of pulmonary stenosis may be influenced by several factors, such as the severity of the stenosis, the compensatory collateral circulation, and complicating infections, but unless the lesion is surgically repaired, most patients with severe stenosis eventually die as a result of failure of the right side of the heart. Pulmonary valvotomy is not indicated in mild, asymptomatic cases in which only the minimal requirements for diagnosis are present, but it should be undertaken whenever the following indications are found: (1) clinical symptoms suggesting failure of the right side of the heart: (2) decreasing arterial oxygen saturation, probably indicating mounting pressure in the right atrium and the shunting of blood across the foramen ovale from right to left; (3) change in the electrocardiographic pattern with widening of the QRS and increasing amplitude and width of the P waves; and (4) an initial right ventricular pressure of 70 or more. These indications will probably be broadened as the operative technique is improved and the mortality rate declines. Catheterization of the right side of the heart through the wound in the right ventricle before and after the valvotomy is the most reliable method of evaluating the success or failure of the operation, because the blind approach usually employed in reaching the valve makes it hard to determine whether the valve has been actually cut, merely stretched, or even left intact. It should be remembered, however, that the patient may derive marked benefit from the operation, even though the pressure in the right ventricle does not return to normal.

Observations in Air Force Recruits of Streptococcal Diseases and Their Control with Orally Administered Penicillin. S. H. Bernstein, H. A. Feldman, O. F. Harper and others. J. Lab. & Clin. Med. 44:1-13 (July) 1954 [St. Louis].

Commercial buffered tablets containing 250,000 units of crystalline Penicillin G were given twice daily (one hour before or two hours after breakfast and again at bedtime) to recruits in the two troop training areas of Sampson Air Force Base. Group A streptococcic pharyngitis and scarlet fever were present in high and practically equal incidence in both troop areas. Recruits were prone to acquire streptococcic infections during the second and fifth weeks of a 10 to 12 week basic training period. In the first prophylaxis trial, the penicillin was administered to all recruits in troop 2 for a 10 day period, while in the second trial the same troop received the drug for five days. In the third trial, one-third of troop 1 was given penicillin for five days. Finally, the entire training base population received 10 days of prophylactic penicillin treatment. Mass prophylaxis with penicillin given orally in doses of 250,000 units twice daily for 10 days suppressed hospital admissions for streptococcic disease pronouncedly for as long as six weeks. Similar treatment for a five day period was noticeably less effective. Both the hospital admission rates for streptococcic diseases and the percentages of positive cultures obtained from the throats of apparently healthy trainees (carriers) were affected similarly by the various penicillin regimens. Serologic types isolated from both hospitalized patients and carriers revealed a predominance of type 3 streptococci throughout the period of investigation; types 12, 42, and 28 were present to a lesser extent. Sensitivity reactions from penicillin given orally were infrequent (0.3%) and mild. Type 12 streptococci were isolated from six of nine patients with acute glomerulonephritis who had positive throat cultures. When prophylactic treatment with penicillin was administered to the total base personnel, it was very effective in aborting a streptococcic disease epidemic, but the trial was conducted too late in the season to determine the duration of the effect of such base-wide treatment. As a result of their experience the authors state that even after 10 days of penicillin administration, the streptococci responsible for the epidemic had not been totally eliminated, and, consequently, they remained as a threat to the new recruits. A definite trend toward a lower rate of disease, however, was noted in the troop whose incoming recruits were being treated.

Present Position of BCG Vaccination. F. Heaf. Tubercle 35:154-163 (July) 1954 [London, England].

Heaf points out that it is now over 30 years since Weill-Halle vaccinated the first person with BCG. He feels that inadequate attention has been given to the different age groups being vaccinated. The higher the infectivity rate in any country, the lower should be the age group in which to start mass vaccinations. In countries with low infection rates, there is always the danger of reversion taking place from one to five years after vaccination. Retesting, therefore, becomes necessary. On the basis of four years' experience with BCG vaccine in Great Britain, Heaf concludes that the vaccine is harmless. There being no satisfactory method of assessing immunity against tuberculosis, one does not know the immunizing power of vaccination, but there is evidence that vaccination establishes resistance that suppresses the multiplication of bacilli following virulent infection and confers some protection against the development of progressive primary lesions. Although the relationship between tuberculin sensitivity and immunity is not known, the tuberculin test is the only practical method of selecting persons for vaccination and determining if the vaccination has been satisfactory. In view of the paucity of information on post-vaccination tuberculin sensitivity, detailed records should be kept of all vaccinations. The prevaccination tuberculin test is necessary and should be of the strength of 10 toxic units (T. U.). A postvaccination test of 10 T. U. is desirable to provide information on the potency of vaccines, the tissue response in different races, and the duration of tuberculin sensitivity, and to link up the observed reactions on humans with animal experiments. The most satisfactory way to vaccinate is by the intradermal method. Fresh liquid vaccine is superior to freeze-dried vaccine in producing tuberculin sensitivity. One of the great problems of the future will be the standardization of BCG vaccines. In view of the need for keeping full records, the lack of information on tuberculin sensitivity and the incomplete knowledge on immunity against tuberculosis, the cautious development of BCG program is to be commended rather than condemned. Although BCG vaccination can produce a positive lepromin reaction, it is too early to assume that it confers immunity against leprosy.

Further Experiences with BCG Vaccination. D. Bergsma. Nederl. tijdschr. geneesk. 98:1622-1626 (June 12) 1954 (In Dutch) [Amsterdam, Netherlands].

In 1950 Bergsma presented a preliminary report on BCG vaccination for the protection of nursing personnel in hospitals for tuberculous patients. It was found that nearly 30% of student nurses who entered tuberculosis services with a negative tuberculin reaction contracted a more or less severe form of tuberculosis, which in some cases had a fatal outcome. Since the introduction of BCG vaccination a radical turn for the better has taken place. However, since severe complications have been reported in the vaccination of infants with BCG, the Public Health Service of the Netherlands has placed limitations on this form of vaccination. This fact and the desire to answer the question whether BCG actually exerts a protecting effect against acute infection with tubercle bacilli induced Bergsma to evaluate his more recent experiences with BCG vaccination in the personnel of a sanatorium for tuberculous patients. From April 1, 1947, to Jan. 1, 1950, he found active tuberculosis in 4 of 60 vaccinated probationer nurses; from Jan. 1, 1950, up to now there was none in 100 probationers. In 280 vaccinated persons he encountered no complications. The author does not feel qualified to comment on the complications resulting from BCG vaccination in infants, but says that reports indicate that severe lymph node reactions and formation of abscesses do occur in young infants vaccinated with BCG. He stresses the importance of waiting until the student nurse shows a positive tuberculin reaction before allowing her to perform nursing services in a tuberculosis hospital. He advises that nursing personnel who have been vaccinated with BCG be examined three times at two-week intervals during the period when immunity develops, and says the tuberculin test should be made after eight weeks.

Prolonged Action of Local Anaesthetics in Rheumatic Disease. T. H. Howell. Brit. J. Phys. Med. **17**:159-160 (July) 1954 [London, England].

Injection of local anesthetics into the painful area provides symptomatic relief in chronic rheumatic disease. Pain is usually relieved for a few hours to a few days. Two preparations were used experimentally in an attempt to extend the time of relief from pain: one was Efocaine (a solution of 1% procaine, 0.25% procaine hydrochloride, and 5% butyl-*p*-aminobenzoate in a solvent composed of 2% polyethylene glycol-300, 78% propylene glycol, and water), and the other was a mixture of procaine hydrochloride (10%) solution with 25% polyvinylpyrolidone in a proportion of one to two. Efocaine was employed in 18 patients who received 20 injections; procaine hydrochloride and polyvinylpyrolidone was given to 24 patients, who received 30 injections in all. Both groups of patients were attending the Rheumatic Clinic of St. John's Hospital, Battersea, England, because of either chronic (inactive) rheumatoid arthritis or osteoarthritis. Of the 30 injections (16 intra-articular, and 14 intramuscular) of the mixture of procaine hydrochloride and polyvinylpyrolidone two resulted in undesirable reactions and three were ineffective; the other 25 produced relief for from one to over 14 days. Of the 20 Efocaine injections (12 intra-articular and 8 intramuscular) 7 caused either local or general reactions and one was ineffective; the other 12 injections effected relief. Thus it appears that in this short trial the mixture of procaine hydrochloride and polyvinylpyrolidone produced more often prolonged relief from pain and fewer bad reactions than did Efocaine.

Leprosy in a Seven Months Old Child. J. A. Dreisbach. Leprosy Rev. **25**:81-82 (April) 1954 [London, England].

The incubation period of leprosy is usually accepted as ranging from 3 to 15 years, or even longer. Workers in highly endemic areas occasionally see children under 3 years of age with clinical leprosy. The 7-month-old child whose history Dreisbach presents belonged to a family of five who presented themselves for examination and admission at the Kano Leprosy Settlement of the Sudan Interior Mission. The father had very far advanced lepromatous leprosy, showing heavy nodulations and infiltrative lesions. There was marked mucous membrane involvement with labial, buccal, lingual, pharyngeal, and laryngeal nodules and infiltrations, also nasal septal ulceration and perforation. Three sons, 5 years, 3 years, and 7 months old, all had early incipient lesions manifested as flat, hypopigmented macules. The 7-month-old infant had a large, flat, hypopigmented macular lesion of the face. A second lesion was noted on the posterior aspect of the left thigh, extending up on to the left buttock. The third lesion was on the anterior aspect of the right thigh. A smear taken from the lesion on the right thigh revealed a few Mycobacteria leprae. Smears taken from the other lesions were negative. Sulphetrone (tetrasodium 4,4′-bis[γ-phenylpropylamino]-diphenyl sulfone) in the form of a 50% aqueous solution was administered by subcutaneous injections, which were given twice weekly with a maximum weekly dose of 1 gm. The child tolerated this treatment well. By the end of the fifth month of treatment the lesions on the face and right thigh were completely repigmented. The lesion on the left thigh persisted for over a year. At this time, after 28 months of treatment, there are no clinical manifestations of activity of the disease.

Histoplasmosis: Clinical and Pathologic Study of 20 Cases. D. N. Vivian, L. A. Weed, J. R. McDonald and others. Surg., Gynec. & Obst. **99**:53-62 (July) 1954 [Chicago].

The authors review the clinical and pathological characteristics of histoplasmosis as observed in 20 cases of this disease seen at the Mayo Clinic. The diagnosis was proved by culture in all but one. This case was included because the pathological and clinical picture was consistent with that of histoplasmosis, and the organisms seen on microscopic section were typical of Histoplasma capsulatum. Histoplasmosis is a granulomatous disease caused by the fungus H. capsulatum. The granuloma that this fungus produces is a small collection of epithelioid cells, intermixed with foreign body giant cells and surrounded by small mononuclear cells resembling lymphocytes. Sections revealed either caseating or noncaseating tubercles, the latter type predominating. The disease may simulate tuberculosis so much that patients who present symptoms of pulmonary or even generalized tuberculosis, but from whom tubercle bacilli cannot be isolated, should undergo additional bacteriological studies to isolate H. capsulatum. Even on histopathological examination histoplasmosis may simulate tuberculosis so closely that a diagnosis should not be made by this method alone unless organisms are clearly distinguishable. Histoplasmosis may be localized or generalized and it may imitate any other granulomatous disease. The histoplasmin skin test did not prove useful in differential diagnosis. The disease occurs much more frequently than was previously considered; many infections are mild and subclinical. The route of entry of the fungus is not definitely known, although circumstantial evidence strongly suggests the respiratory and digestive tracts. Many patients who have this disease will die of it, because there is no satisfactory specific therapy. Patients with isolated pulmonary lesions have an excellent chance of cure by surgical treatment. Involvement of the adrenals occurs frequently in generalized histoplasmosis, and this may be the causative basis for some of the cases of Addison's disease. Histoplasmosis should be considered when a case of Addison's disease is being investigated. If, on microscopic section, spherical or oval encapsulated organisms 2 to 5 μ in diameter are seen in the cytoplasm of macrophages in a granulomatous lesion and the patient has not been in tropical areas, a diagnosis of histoplasmosis may be made regardless of whether or not a positive culture has been obtained. Positive cultures may be obtained even though no tubercles or organisms are visible in histological sections. Sabouraud's medium is not so satisfactory for culturing H. capsulatum as enriched media containing antibiotics. Patients who present an oropharyngeal lesion or have renal involvement as evidenced by albuminuria seem to have a poorer prognosis than do patients without these lesions.

Bacteriologic and Serologic Aspects of Pinta. C. R. Rein. Am. J. Syph. **38**:336-340 (July) 1954 [St. Louis].

According to Rein, pinta is a distinct clinical entity that belongs to the so-called treponemal diseases. Pinta has many bacteriological and serologic aspects that are similar to those found in syphilis, yaws, and bejel but in some respects are different. Treponema carateum, under dark-field examination, is morphologically identical with the treponemas of syphilis, yaws, and bejel. Laboratory studies in vitro and in vivo did not indicate any consistent variation in the susceptibility to penicillin of the treponemas causing venereal syphilis, endemic syphilis, yaws, bejel, or pinta. Clinically, all the so-called treponemal diseases, including pinta, respond to treponemicidal agents such as bismuth, arsenic, penicillin, chlortetracycline (Aureomycin), oxytetracycline (Terramycin), dihydrostreptomycin, and the newer antibiotics, but the clinical response of pinta to penicillin therapy is slower than that of the other entities in this group. In pinta, four to six months elapsed before the primary or early secondary lesions disappeared. The late secondary lesions required from 6 to 12 months for complete healing. Despite the slower clinical response of pinta to penicillin and other treponemicidal agents, the dark-field treponemal disappearance time is practically the same in all the treponemal conditions. No lesions developed in either rabbits or hamsters to which positive material was transferred from four patients with typical lesions of pinta; but in two hamsters, each inoculated from a different patient, typical mobile treponemas were demonstrated in the inguinal lymph node by dark-field examination. Although it is generally agreed that pinta in its later stages confers immunity against reinfection, recent studies seem to indicate that the different strains of treponemas do not confer immunity against each other. Unlike venereal syphilis but like yaws, pinta does not produce prenatal infections or lesions of the liver, kidney, or spleen. Patients in the primary stage of pinta have negative results from routine serologic tests for syphilis, whereas 60% of the patients in the secondary stages of pinta will have positive results. More recent studies indicate that with the use of more sensitive and more specific serologic tests, there will be a higher incidence of positive reactions in patients with early pinta. It is now well established that untreated patients with pinta will, ultimately, develop positive serologic reactions to all tests employing lipoidal antigens. While Nelson's practical test for the detection of a specific antibody in treponemal infections proved to be of great value in differentiating true from false positive reactions, it was not possible to differentiate the syphilis from the pinta strains of treponemas by this specific procedure. The bacteriological and serologic aspects of pinta would thus tend to corroborate the views of Hudson that this infection is similar in many ways to the other treponemal infections, namely syphilis, yaws, endemic syphilis, and bejel. The term treponematosis could well include all of these infections.

Disease Aspect of Diabetic Polyneuritis and Its Treatment with Vitamin B_{12}. H. Sauer and A. Düssler. Deutsche med. Wchnschr. 79:1046-1048 (June 25) 1954 (In German) [Stuttgart, Germany].

Vitamin B_{12} was used in the treatment of diabetic polyneuritis in 18 patients between the ages of 24 and 77. The average duration of diabetes in these patients was 13 years, and the average duration of the polyneuritic complaints was 3.3 years. Nine patients were hospitalized and nine were ambulatory. Vitamin B_{12} in watery crystalline solution was injected subcutaneously or intramuscularly. A dose of 15 mcg. proved to be insufficient in several patients; therefore, the initial dose was increased to 30 to 60 mcg. per day. Treatment was continued for about 10 to 14 days. In a few refractory cases the daily dose was increased temporarily up to 1,000 mcg. After two to three days of treatment, most of the patients considered themselves improved in that pain and paresthesias subsided. Shortly thereafter, hyperesthesia and hyperalgesia and plantar burning likewise subsided. Two patients experienced relief from cramps in the calves. Reflex disturbances, hypesthesia, and hypalgesia did not improve. Symptoms caused by the autonomic nervous system, such as nocturnal diarrhea, incontinence of urine, impotence, and decreased secretion of sweat did not improve either, but there is the possibility that treatment was not continued long enough. Of the 18 patients, 15 were improved subjectively or were free of complaints; 3 were not improved despite high doses used in 2. Doses of 30 to 60 mcg. daily for one to two weeks are recommended, and smaller doses are in general sufficient for the treatment of recurrences. The authors' observations confirmed those by Menof and Sancetta that vitamin B_{12} is therapeutically effective in diabetic polyneuritis. Most impressive was the almost instant improvement even in the presence of unbalanced metabolism, and in patients with a chronic course of the polyneuritis despite well controlled diabetes. Careful control of metabolism is an indispensable adjuvant to treatment with vitamin B_{12}. It seems highly probable that vitamin B_{12} exerts a favorable effect on the disturbed metabolism of the nerves in patients with diabetic polyneuritis, but the character of this disturbance of metabolism has not been fully elucidated.

The Management of Chronic Hypoparathyroid Tetany. C. R. B. Blackburn. M. J. Australia 1:928-932 (June 19) 1954 [Sydney, Australia].

The management of patients with chronic hypoparathyroid tetany is illustrated by two cases, one of idiopathic hypoparathyroidism in a 30-year-old woman and the other of hypoparathyroidism after thyroidectomy in a 54-year-old woman. The patient with idiopathic hypoparathyroidism and tetany complicated by bilateral cateracts, intracerebral calcification, and epidermal changes obtained excellent control of her tetany by being placed on a diet of low phosphorus and calcium content, and receiving calcium lactate, 10 to 20 gm. daily (three to six teaspoonsful), to ensure a high calcium intake and to compensate for the calcium-poor diet. Dihydrotachysterol (A. T. 10) was given in doses of 2.5 mg. (two capsules of 1.25 mg.) daily with Amphojel, a proprietary colloidal suspension of aluminum hydroxide. The excellent and maintained biochemical response of the patient and her clinical improvement were striking. On various occasions changes in the dosage of dihydrotachysterol were made for investigative purposes, and it was found that the serum calcium level rapidly fell and tetany developed when dihydrotachysterol with added calcium was withheld. Her serum calcium level rapidly returned to normal or above when treatment was reinstituted. After two years of treatment with dihydrotachysterol, vitamin D in doses of 100,000 units daily was substituted for dihydrotachysterol without significant disturbance in her serum calcium or serum phosphorus levels. Calcium and serum phosphorus determinations were made frequently on this patient. The dangers of hypercalcemia cannot be overemphasized. Patients may take calcium and vitamin D for years without incident; but in some hypercalcemia may develop rapidly, as it happened in the author's second patient, who had carpopedal spasms and a weak voice after thyroidectomy for hyperthyroidism. She too was given a diet of low phosphorus and calcium content and in addition 150,000 units of vitamin D, 15 gm. of calcium gluconate, and two teaspoonsful of Amphojel daily. One month later her calcium intake was increased by discontinuing the calcium gluconate and by starting the administration of 20 gm. of calcium lactate daily. She was maintained well and with normal serum calcium concentrations for the next six months. An acute episode of hypercalcemia was observed 23 months after the institution of treatment with calcium and vitamin D, and all antitetany treatment was stopped. Her condition improved as her serum calcium level fell. Two weeks later treatment was recommenced by the daily administration of 50,000 units of vitamin D and 12 gm. of calcium lactate, but her serum calcium level rose to 13.1 mg. per 100 cc. in 14 days, and, therefore, all antitetany treatment was suspended for six months. She is now maintained in a clinically and biochemically normal condition on a diet of low calcium and phosphorus content, 20,000 units of vitamin D and 6 gm. of calcium lactate daily. No reason for this patient's hypercalcemia can be suggested, other than that some remaining parathyroid tissue resumed secretion. This supposition is supported by the small dose of vitamin D that is now required to maintain the patient's serum calcium level. Adequate treatment will eliminate acute attacks of tetany, and the chronic complications will not occur. The necessity for close control of treatment by frequent serum calcium determinations and for continuing treatment for the rest of the patient's life is stressed.

Comparison of Thyroid Function Tests. B. J. Duffy Jr., T. E. Wheeler, P. J. Novak and H. N. Edwards. U. S. Armed Forces M. J. 5:995-999 (July) 1954 [Washington, D. C.].

The measurement of the concentration of radioiodine (I^{131}) in the thyroid gland and the chemical determination of the protein-bound iodine of the blood serum are laboratory tests that have gained increasing use in the diagnosis of thyroid disease. The purpose of this report is to compare I^{131} and protein-bound iodine determinations in a group of patients referred for evaluation of their thyroid function, and to contrast these tests with the determination of the basal metabolic rate. Concentration in the thyroid gland was measured one hour and 24 hours after the oral administration of $10\mu c$ of I^{131}. The patient was in the fasting state to facilitate the one hour screening determinations of I^{131}. A careful history of any previous intake of desiccated thyroid, iodine-containing medication, or iodized oils used in roentgenographic diagnosis was obtained to rule out these sources of error. Six cubic centimeters of blood was drawn into a tube and the protein-bound iodine was determined by the method of Brown and associates, with minor modifications. This method enables a technician to make up to 12 determinations daily in duplicate. The same iodine compounds which interfere with the I^{131} tests adversely affect the determination of protein-bound iodine. The I^{131} and protein-bound iodine test results in 50 euthyroid and in 25 hyperthyroid patients are shown in figures. In the normal patients more than 97% of the results were between the limits of 5% and 45% I^{131} concentration, and 100% were between 3.5 and 8 protein-bound iodine gamma per 100 cc. of serum. In the hyperthyroid patients, I^{131} concentration was between 50% and 85% in over 94% of the cases, while in all cases the protein-bound iodine per 100 cc. of serum was between 8 and 16 or more. Despite the expected overlap between the higher normal and lower hyperthyroid readings, there was clear-cut separation between the euthyroid and hyperthyroid groups with both tests. The authors show that the basal metabolism test is of limited value in the diagnosis of thyroid function.

Needle Biopsy of the Liver: An Appraisal of Its Diagnostic Indications and Limitations. M. S. Kleckner. Ann. Int. Med. 40:1177-1193 (June) 1954 [Lancaster, Pa.].

Needle biopsy of the liver is a valuable diagnostic measure and the information it provides can be used to supplement that obtained from the history, physical findings, and biochemical tests in cases of hepatic disease. The procedure, when adequately performed, causes the patient minimal discomfort and often saves him from unnecessary laparotomy in the presence of metastatic neoplasm or acute hepatitis. The approach to the liver may be either subcostal, in the case of a palpably enlarged liver reaching 3 cm. or more below the costal margin, or intercostal. Complications accompanying the procedure include postbiopsy pain, "pleural shock," bile peritonitis, hemorrhage, pneumothorax, hydrothorax, perforation or penetration of an adjacent organ, and even death. Contraindications to its use are the presence of hemorrhagic conditions; hepatic abscess; diseases affecting the right lower lung, diaphragm, and peritoneum; and ascites. Multiple biopsy punches in cases of obstructive jaundice are hazardous and should be avoided. Comparison of needle biopsy and necropsy liver specimens from patients with diffuse pathological processes affecting the liver may be expected to show a high degree of diagnostic correlation. Diagnostic indications for the procedure, therefore, consist chiefly of indeterminate hepatomegaly, portal cirrhosis, hemochromatosis, primary and metastatic neoplasms, hepatitis and its sequelae, and polycystic disease of the liver. Focal or widely separated lesions, however, may be missed completely, and this constitutes one of the principal objections to needle biopsy. Granulomatous hepatitis or miliary granuloma of the liver may be observed histologically in patients with such varying conditions as sarcoidosis, brucellosis, histoplasmosis, syphilis, tularemia, and lymphoma and should be considered a nonspecific finding. The quantity of liver tissue obtained at biopsy is usually too small to permit culture for bacteria and fungi. The value of the procedure is also limited by the difficulty of distinguishing histologically between various disease processes, such as primary and secondary cirrhosis and chronic hepatitis with jaundice and obstructive jaundice. A diagnosis of hemochromatosis, however, can be reliably confirmed only by needle biopsy, especially if the disease is subclinical.

Diagnosis of Cancer of the Stomach in Its Initial Stage. C. Debray. Semaine hôp. Paris 30:2798-2805 (July 10-14) 1954 (In French) [Paris, France].

The gastric cancer that is discovered in its initial stage can be cured by surgical removal. Unfortunately, early diagnosis of this initially relatively asymptomatic lesion is very difficult and requires a great many clinical and laboratory studies. Most patients with cancer of the stomach present themselves when the lesion is anatomically no longer in its initial stage or when it is inoperable. Radiographic study is essential, and must be as technically perfect as possible. Expert interpretation of the pictures is required. There is no characteristic picture, but certain ones are suspect, such as an area of stiffness, a niche, or a lacuna. Radiography alone is not definitive, but must be associated with other techniques, particularly gastroscopy, which ought to be considered its complement. This method can be used repeatedly to follow the evolution of the cancer, which appears as an erosion, a vegetation, or a localized parietal infiltration. Biopsy of the gastric mucosa and gastric cytodiagnosis are new and important methods that are being perfected. The former does not lead to gastric hemorrhage, as some believe, witness the fact that the authors performed about 1,000 such biopsies without mishap. It is, nevertheless, a very cumbersome procedure; the second is much less so. In spite of the efforts made in the last 20 years, the number of cases of gastric cancer diagnosed in the initial stage has been small. Although systematic isolation of it is now possible with the four techniques mentioned, such a program would be unfeasible for large numbers of persons. It is suggested that two classes of subjects be watched: descendants of gastric cancer patients and persons with achlorhydria, especially those with pernicious anemia.

SURGERY

Surgical Treatment of the Auriculotemporal Syndrome. K. B. Coldwater. A. M. A. Arch. Surg. 69:54-57 (July) 1954 [Chicago].

According to Coldwater the disagreeable symptom complex of gustatory sweating was first reported as the auriculotemporal syndrome by Frey in 1923, and a number of cases have been subsequently reported. The condition most frequently follows operations on, or injuries to, the parotid gland and is characterized by flushing and profuse sweating on eating in the cutaneous distribution of the auriculotemporal nerve. Gustatory sweating has been reported also in areas supplied by other divisions of the sensory supply of the head and neck, such as in the frontal area supplied by the supraorbital nerve, in the neck following a cervical thoracic sympathectomy performed through the posterior approach. Gustatory sweating in the distribution of the sensory nerves of the head and neck is not inhibited by procaine blockade of the cervical sympathetic trunk or ganglia. Sympathetic blocking agents are also ineffective. Coldwater presents histories of two patients in whom resection of the auriculotemporal nerve and its anastomotic branches from the facial nerve produced relief from gustatory sweating. It is postulated that the efferent arc in this syndrome is composed of cranial sudomotor fibers passing by way of the facial nerve to the cutaneous nerves of the head and neck. The occurrence of this syndrome following operations on the parotid gland may be prevented by the section of the auriculotemporal nerve or the facial anastomotic fibers at the time of the primary operation.

The Results of Mitral Valvotomy for Mitral Stenosis. J. H. Gibbon Jr., F. F. Allbritten, J. Y. Templeton and others. Ann. Surg. 139:786-796 (June) 1954 [Philadelphia].

The technique of mitral valvotomy, by either the finger fracture or the knife method, is relatively simple, and the end-results of the operation apparently depend more on the severity of the destructive processes of the initial disease, the anatomic changes present, and the functional capacity of the patient than on the skill of the surgeon. Thus the results reported from many different clinics are remarkably similar and generally excellent. Accurate assessment of the results of the operation is often difficult, partly because the functional status of these patients may change from time to time and partly because several different methods may be employed for this purpose. The standard functional classification of the New York Heart Association was used by the authors in determining the preoperative and postoperative status of the 95 patients in their series. A mistaken diagnosis of mitral stenosis led to valvotomy in 11 patients who were found at operation to have mitral regurgitation without a significant degree of mitral stenosis. These patients should obviously not have been subjected to valvotomy, although, whenever mitral stenosis seems to be present, an exploratory procedure should be carried out. Complete relief of their symptoms was obtained by 6 of the 15 patients in class 4, most of whom were in chronic congestive failure. These patients are extremely poor risks, but since valvotomy may prove beneficial to them and their prognosis without it is hopeless, it should be tried, provided there is good evidence of mitral stenosis. Follow-up of six months or more in 61 of the patients with mitral stenosis, sometimes associated with mitral regurgitation, in whom valvotomy was performed showed that 43 had excellent results; 8 had good results; the condition of two was unchanged; and one was made worse. Five of the six operative deaths in this group occurred in class 4 patients; the other occurred in a patient with class 3 disability; and there was one late death, also in a class 3 patient.

Cardiac Enlargement Following Mitral Commissurotomy. L. A. Soloff and J. Zatuchni. Am. J. M. Sc. 228:57-69 (July) 1954 [Philadelphia].

Serial roentgenograms of the heart were made of 44 consecutive patients subjected to mitral commissurotomy. Of the 44, 7 died and 17 could not be followed roentgenologically for a minimal postoperative interval of six months because of geographical reasons. Of the remaining 16 female and 4 male patients between the ages of 5 and 57 years, 11 had larger cardiac shadows than those observed preoperatively; in 4 the cardiac shadow was unchanged; and in 5 it was slightly smaller than that before the commissurotomy. The changes in cardiac size, whether in the direction of increase or decrease, were, in most instances, the result of over-all generalized changes and not the result primarily of changes in those portions of the heart proximal to the obstruction of mitral stenosis. The only exception to this statement is the decrease or absence of the left third segment presumably due to surgical amputation of the left auricular appendage. Of the five patients with minimal universal diminution in cardiac size occurring after commissurotomy, two had a pulmonary infarction one month and two weeks, respectively, before the operation, a third patient had recurrent bouts of infection of the respiratory tract, the fourth had cough, ankle edema, and orthopnea for three months before the operation, and the fifth patient had been under the care of a psychiatrist for emotional problems. In all these patients, the diminution in cardiac size was attributed principally to a natural remission from a preoperative event precipitating heart failure. Of the 20 patients, 17 had a systolic murmur after the operation and the authors consider this murmur as indicative of mitral regurgitation. Ten of the 17 patients had larger cardiac shadows after the operation. The surgical production of mitral regurgitation in rare cases may produce permanent cardiac enlargement. Cardiac enlargement after mitral commissurotomy, however, is attributed primarily to an intensification or reactivation of rheumatic carditis, which occurred in 7 of the 11 patients with larger cardiac shadows.

Chronic Constrictive Pericarditis. R. Robertson. Am. J. Surg. 88:76-87 (July) 1954 [New York].

Constrictive pericarditis is usually the result of tuberculous pericarditis. In this series of seven cases of constrictive pericarditis treated surgically, there was definite evidence of tuberculosis in four patients, and suggestive histories in two. Highly satisfactory results were obtained from pericardiectomy in five patients, and two died shortly after operation. Two of the seven were operated on during the clinically active stage of their tuberculous pericarditis. Neither operation proved to be of value: one of the patients died, and the other had to have a second pericardiectomy. Surgery is ideally not indicated until tuberculous pericarditis has become inactive and fibrosed and constricts the heart. The essential factor in surgical treatment of this condition is freeing of the ventricles, first the left and then the right. This is all that is required in most cases. However, the possibility of obstruction of the vena cava must be considered and searched for while planning operation.

Use of Hypothermia in Prevention of Paraplegia Following Temporary Aortic Occlusion: Experimental Observations. R. G. Pontius, H. L. Brockman, E. G. Hardy and others. Surgery 36:33-38 (July) 1954 [St. Louis].

Although surgical treatment of aortic disease by resection provides a more favorable outlook for these grave conditions, certain technical factors limit the application of this form of therapy. This stems primarily from the fact that cross-clamping of the aorta is necessary during the excision of the diseased segment and its replacement by an aortic homograft. In cases in which the lesion is constrictive or obliterative, such as coarctation, this does not constitute a problem owing to the fact that a collateral circulation already exists. In patients with aneurysmal disease, cross-clamping of the aorta creates potential ischemic hazards. Studies were undertaken to determine the effectiveness of hypothermia in preventing spinal cord damage following temporary arrest of the circulation in the thoracic aorta. Four groups of experiments were performed with a control series in each group and with the period of aortic occlusion being one hour for all animals. Although the aorta was occluded just distal to the left subclavian artery in all the animals, in certain groups additional measures were used to diminish distal blood flow, such as interruption of intercostal arteries and also the additional occlusion of the aorta at a lower level. Whereas there was only a slight reduction in over-all mortality following use of hypothermia in these experiments, there was a striking reduction in the incidence of paraplegia. The over-all paraplegia rate for the surviving control animals was 65%, but none of the surviving hypothermic animals had paraplegia. On the basis of these experiments it is concluded that hypothermia has a definite protective influence against ischemic damage of the spinal cord following high aortic occlusion.

Surgical Reversal of Superior Vena Cava Syndrome: Report of Case Caused by Intrathoracic Goiter and Associated with Roentgenographic Hilar Vascular Shadow Simulating Neoplasm of Chest. B. A. McArt, F. B. Ramsey, W. A. Tosick and K. R. Woolling. A. M. A. Arch. Surg. 69:4-11 (July) 1954 [Chicago].

The symptoms of superior vena cava obstruction are due to venous hypertension in the region normally drained by this vessel. The most prominent signs are the increased venous pattern and the cyanosis in the upper half of the body. The veins in the upper extremities, head, neck, and chest are dilated and prominent and exhibit increased venous pressure, as contrasted with the normal pressure in the veins of the lower extremities. The 50-year-old patient whose case is presented was hospitalized for treatment of varicosities and cellulitis. Physical examination disclosed large distended veins of the neck and upper extremities and a marked increase in the venous pattern of the chest. The thyroid gland was moderately firm and multinodular, but it was not possible to delineate the lower poles of the gland. When the patient swallowed, both enlarged lobes of the thyroid could be felt extending downward to a substernal position. The increased venous pattern of the upper half of the body became more prominent on recumbency. The patient had noted fulness of the neck for the past 5 to 10 years and prominent veins of the neck and chest for a somewhat shorter period. Roentgenologic and fluoroscopic examinations of the chest disclosed an increase in the size of the left hilar shadow, suggestive of bronchogenic carcinoma. There was also a homogeneous density in the mediastinum in the supracardiac region, with slight narrowing of the tracheal air shadow in this region, suggestive of an intrathoracic goiter. The region of the thyroid was explored and a large intrathoracic goiter found. Subtotal thyroidectomy was performed, removing approximately seven-eighths of each lobe of the gland and the isthmus. The engorgement and enlargement of the veins of the neck, upper extremities, and chest disappeared in the postoperative period. The cellulitis of the right leg was treated by elevation of the extremity and application of warm moist packs, with resultant healing. The preoperative sensation of "fulness" in the head, the tinnitus, impaired hearing, conjunctival injection, and hoarseness decreased considerably. Substernal goiter should be considered in the differential diagnosis of the superior vena cava syndrome. Dilated hilar veins may be an integral component of the superior vena cava syndrome, and roentgenologically, these may produce a hilar shadow that may simulate that caused by pulmonary neoplasm. The shadow may regress after removal of the obstruction to the superior vena cava. The superior vena cava syndrome does not necessarily indicate a bad prognosis, which in each case is determined by the nature of the obstructive lesion.

Operations for Fibrous Stenosis of the Common Bile Duct. A. M. Dogliotti and E. Fogliati. Surgery 36:69-79 (July) 1954 [St. Louis].

Dogliotti and Fogliati state that choledocho-odditis (stenosing, scleroretractile odditis) is rarely primary; it is frequently accompanied by stones in the gallbladder and by choledochitis, together with chronic pancreatitis, or by lymphadenopathy of the choledochoduodenal pancreatic trigone. In such cases, or in case of a dilated choledochus, after having carried out the subserous cholecystectomy, if this is necessary, and having performed a choledochotomy at the point of the supraduodenal part of the common bile duct, Dogliotti and Fogliati perform sphincterotomy and plastic surgery of the papilla of Vater, with temporary transcholedochopapillary biliary drainage, both external and internal. This method is ideal because it conserves the sphincter of Oddi in its physiological function, a true safety valve and protection of the biliary ducts against the possibility of cholangitis arising from alimentary reflux. The authors consider five types of postoperative cicatricial stenosis that require surgical treatment. In the case of stenosis of limited extension with simple reduction of the biliary lumen, they enlarge the biliary lumen by a longitudinal incision and a transverse everting suture over a tube prosthesis pushed into the duodenum.

In the case of loss of substance and in closed, briefly extended stenosis of the common bile duct, they perform a resection of the stenotic tract and reconstruct the principal biliary tract with a biliobiliary suture over a tube prosthesis. In cases of closed stenosis, or of notably extended loss of substance of the common bile duct, but with conservation of a stump of the hepatic duct, they perform a terminolateral hepaticoduodenostomy or a hepaticojejunostomy to the jejunum, which is defunctionalized by an enteroenterostomy. In certain cases they performed the operation described by Lahey and Cattel. In cases of double biliary stenosis, the first primary of the papilla and the second postoperative at the level of the supraduodenal tract of the common bile duct, the omission of recognition of one of the stenotic points leads to failure. In cases of complete destruction of the common bile duct the authors regard intrahepatoductogastrostomy, which they devised and used since 1946, as the only possible surgical treatment.

Injury of Cervical Vertebrae with Sequela After 50 Years. C. S. MacCarty and R. A. Mendelsohn. Proc. Staff Meet., Mayo Clin. **29**:372-375 (June 30) 1954 [Rochester, Minn.].

A 66-year-old man was admitted to the Mayo Clinic in September, 1953, with a draining abscess of the right posterior aspect of the neck. His past history revealed that in 1901, at the age of 14 years, he had been shot with a .22 caliber rifle, the bullet entering above the upper lip, below the left nostril, nicking the tongue, and lodging in the neck. He remained well until 1951, two years before admission, at which time, while cranking a motor, he felt something snap in the back of his neck. For the next month he had pain, tenderness, and swelling in the back of the neck. He visited a physician who took cervical roentgenograms and told him that the bullet was still present and was lodged in the first cervical vertebra. The neck was explored, and an abscess was drained. The wound continued to drain for six months despite antibiotic and local therapy. Another abscess formed below the first one, and when the second abscess was drained, the upper sinus healed. The lower wound continued to drain purulent material until the patient's admission to the clinic. The sinus and the fragments of the bullet were removed. It is assumed that the pathogenesis of the osteomyelitis with subsequent draining sinuses was related to the proximity of the bullet to the nasopharynx. Although no direct connection of the bullet or the sinuses with the pharynx could be demonstrated, the history of the patient's having tasted media used to irrigate the sinus, and the demonstration with ethyl iodophenylundecylate (Pantopaque) that the sinus connected with the retropharyngeal soft tissues supported this hypothesis.

Adrenal Medullectomy in Syndromes Caused by Hypersecretion of the Adrenal Medulla and in Many Conditions of the Mesenchyma: Results of 605 Unilateral and Bilateral Interventions. L. Durante. Minerva chir. **9**:506-513 (June 15) 1954 (In Italian) [Turin, Italy].

Durante states that adrenal medullectomy—unilateral and bilateral—is the intervention of choice in the treatment of conditions caused by increased secretion of the adrenal medulla. Only one-tenth of the gland is removed, and the adrenal cortex with its hormones, among which are some that counteract the medulla's hypersecretion, is spared. He uses the extraperitoneal approach, mobilizes the gland, grasps it with a forceps, produces a small incision on the exposed edge, and introduces through the incision spoons of various sizes with which the medulla is curetted away. The bleeding from the central vein of the adrenal is easily controlled by compression. When operating on the right adrenal, which is very close to the vena cava, great caution should be used. Accidents are, however, very rare. The author never injured the vena cava and never observed immediate or late signs of medullary insufficiency or noticeable phenomena of vascular collapse. From 1935, when he first introduced this procedure, to the time of writing, Durante has performed 605 medullectomies with no operative mortality. A total of 126 medullectomies, of which 11 were bilateral, in patients with Raynaud's disease gave excellent results in 67 and good in 46, and brought some improvement in 13. The best results followed bilateral medullectomy. Recoveries have lasted for more than 10 years. Results following unilateral medullectomy in patients with essential hypertension were excellent in 20, good in 32, moderate in 7, and none in 2. Bilateral medullectomy in patients with the same condition gave excellent results in 10, good in 8, and moderate in 5 patients. The intervention—bilateral in 12 and unilateral in 1—gave good results in 13 patients with paroxysmal hypertension, in whom the attacks disappeared and pressure returned to normal. One patient with hypertensive polycythemia was improved, and 12 patients with malignant hypertension were also benefited by unilateral or bilateral medullectomy. The intervention on one or both adrenals benefited 256 patients with endarteritis obliterans. The best results were obtained in those patients in whom the condition was not of long standing and in those in whom the intervention was bilateral. Medullectomy in patients with sclerodermic syndromes increased the temperature of the skin and mucosa and had a good effect on the peripheral circulation, the motility of the joints, the contraction and tonus of the muscles, and the tropism of the skin and the subcutaneous tissue. During the last 20 years, medullectomy has given the author better results than intervention on vessels, nerves, and ganglions. The clinical recoveries obtained in patients with syndromes that are associated with hypersecretion of the adrenal medulla indicate that medullectomy affects not only the vascular system but also all the mesenchymas.

Coarctation of the Aorta in the Infant: Its Surgical Correction. J. Nouaille, J. Mathey, O. Schweisguth and others. Semaine hôp. Paris **30**:2610-2622 (June 25) 1954 (In French) [Paris, France].

Of 15 infants with coarctation of the aorta, 5 were operated on and 10 were not. One of the five died. Eight of the 10 died, and the other 2 had remissions. It appears that surgical treatment is indicated for this condition; the authors recommend it as soon as the diagnosis is made. Two theoretical objections advanced before operation proved to be unfounded. The first was the idea that stenosis of the aortic isthmus in infancy is always a long, hypoplastic segment, as opposed to the diaphragm type seen in adults. The authors did not see any case of the "infantile" type, either at surgery or autopsy. The second objection was that to the long period of aortic clamping necessitated by surgical intervention. It was held that a sufficient collateral circulation would not yet have developed in the pediatric patients, but this was untrue. The four children who survived operation were greatly benefited by it. The one who died had a bronchopulmonary obstruction. This is now considered a contraindication to surgery. Postoperative complications included: abdominal distention; marked diuresis; pulmonary disorders, principally atelectasis from bronchial obstruction; and bulimia. The most important feature in the diagnosis of the coarctation of the infantile aorta is comparative palpation of the radial and femoral arteries. Often no pulse at all is felt in the latter, but, in any case, there is always a significant difference between the two.

Carcinoma of Breast: Surgical Follow-Up Study. A. K. Boyd, H. T. Enterline and J. G. Donald. Surg., Gynec. & Obst. **99**:9-21 (July) 1954 [Chicago].

To ascertain the results of the surgical treatment of carcinoma of the breast and to test the reliability of various criteria of operability and prognosis, a detailed analysis was made of all patients with carcinoma of the breast treated at the Hospital of the University of Pennsylvania during the 20 year period from 1924 through 1943. The 1,034 patients included 227 secondary cases that previously had been treated elsewhere. The 807 primary cases were further analyzed. About half of the patients had no pain, and those who did complain of pain in the breast or axilla considered it mild, transient, or intermittent. The studies by five-year periods of the time interval between the onset of the first symptom of breast carcinoma and the admission of that patient to the hospital indicate an encouraging improvement. Whereas in the 1924 to 1928 period, only 0.8% of the patients reported in less than two weeks from the onset of symptoms and 5.8% in less than one month, in the 1939 to 1943 period these percentages had risen to 12.2% and 23.3% respectively. Conversely, whereas in the 1924 to 1928 period, 22.0% of the patients were admitted with symptoms of over 12 months in duration, this situation obtained in the 1939 to 1943 period in 9.5%. Six hundred seventy-nine of the 807 patients with breast carcinoma were subjected to surgical therapy, and 114 were given radiation therapy because of refusal to permit surgery, hopeless local advancement of carcinoma, or distant metastatic spread of the disease. It was found that the criteria of operability set forth by Haagensen and Stout were fairly well but not absolutely supported in this series of cases. Some instances of salvage in the presence of skin ulceration combined with edema of the skin make this a somewhat less dire prognostic finding. The liberal rather than strict application of their criteria will result in the salvage of an occasional additional breast carcinoma patient. Classification of the breast carcinomas by Richards' stage classification and by his clinical index of malignancy enables one to predict with greater accuracy than by the choice of any single pathological feature the odds of a patient's surviving five years and of being free of evidences of breast carcinoma. There was more evidence that papillary, strictly intraductal, and colloid carcinomas have a better prognosis than breast carcinomas in general. Poor prognoses are associated with diffuse involvement of the breast, multiple carcinomas of the breast, involvement of pectoral fascia and muscle, and blood vessel invasion. Microscopic involvement of the skin and invasion of the axillary fat from involved lymph nodes seem not to affect prognosis. There was indirect evidence that carcinoma in the young affords no worse a prognosis than in any other age group. The results of simple mastectomy, even though applied to patients with less far-advanced disease than those to whom radical mastectomy was applied, have failed to prove as beneficial as the results of radical mastectomy. Radical mastectomy is the best treatment for carcinoma of the breast that can be operated on.

Benign Gastroduodenal Disorders Treated by Billroth-I Gastric Resection. E. J. Schmitz, H. N. Harkins, H. G. Moore and H. H. Olson. Lancet 2:4-9 (July 3) 1954 [London, England].

The physiological, technical, and clinical advantages of the Billroth 1 operation, at present apparently in disfavor, are presented. A series of 198 patients with benign gastroduodenal conditions were treated by this method. Sixty-six per cent of them had duodenal ulcer. An average proved 71% resection was done in 104 cases. The mortality was six (3%) in this group of patients, of whom 45% were aged 60 or over. Ulceration of the gastric stump occurred in 1%. The postgastrectomy dumping syndrome was manifested in 37%. In 92% of the 184 cases the result was at least satisfactory. The authors conclude that the Billroth 1 operation is applicable to most cases of duodenal lesions. They have done only two Billroth 2 operations in the last two and a half years.

Suture Ligation of the Lung and Partial Thoracoplasty in the Treatment of Tuberculosis: A Four-Year Experience. P. T. DeCamp and P. W. Acree. Am. Rev. Tuberc. 70:61-70 (July) 1954 [New York].

In the course of four years, partial thoracoplasty and suture ligation of the upper lung, according to Paulino's technique, was performed 42 times in 38 patients with far or moderately advanced pulmonary tuberculosis. The operation was carried out as a unilateral procedure in 34 patients and as a bilateral procedure in 4. Twenty-one patients were aged over 40, and 9 were over 50. Thirty-seven patients on whom 40 operations were performed had been followed long enough for an evaluation of the results of the operation. Twenty-two (59%) had their disease classified as inactive (according to the classification of 1950 of the National Tuberculosis Association) for a mean period of 23 months; in 7 patients the lesions were arrested for a mean period of 11 months; 5 patients had active disease; and 3 patients died. Thus approximately 80% of the patients obtained apparent arrest or inactivation of their disease after suture ligation of the lung and partial thoracoplasty, and in only one patient has ipsilateral disease, once apparently controlled, subsequently been reactivated. These results indicate that suture ligation of the lung with partial thoracoplasty is a safe, reliable method of assisting in the control of pulmonary tuberculosis in properly selected advanced cases of involvement of the upper half of one or both lungs. It is a single-stage operation in which costal resection and skeletal deformity are minimal and respiratory function is well preserved. The authors believe that lung suture with partial thoracoplasty is more reliable and less complicated than other forms of partial thoracoplasty. No significant foreign material is introduced, no large empty space is created, and a reliable degree of collapse, compression, and fixation of the diseased lung is attained as the ligatures are carefully applied under direct vision. For disease that does not extend below the level of the hilum, the procedure has significant advantages over more extensive thoracoplasty techniques. Under certain circumstances the Paulino procedure is preferable to excisional surgery and, in a few carefully selected cases, lung suture may be used effectively when all other surgical techniques are contraindicated.

Surgical Management of Congenital Megacolon (Hirschsprung's Disease). D. State. Am. J. Gastroenterol. 22:47-54 (July) 1954 [New York].

Physiological studies and examination of the colon after a barium enema in 18 patients with congenital megacolon revealed a normal rectum; a "narrowed" segment of the rectosigmoid and sigmoid portions of the colon; marked dilatation and absence of peristaltic waves and normal haustral markings of the descending, sigmoid, and variable portions of the left side of the transverse colon; active peristalsis and normal haustral markings of the cecum, ascending, and right side of the transverse colon. When the colon is exposed at laparotomy the differences between the right and left sides of the colon are marked and correspond to the roentgenographic findings. A one-stage transabdominal operative procedure is described in which the narrowed terminal segment of the sigmoid and portion of the colon showing no peristaltic activity roentgenographically are removed. The residual part of the large intestine (ascending and right side of the transverse colon) is then anastomosed to the upper portion of the rectum at a distance of 6 to 10 cm. from the anal skin margin. This operation has been done in 18 patients without a death. Seventeen have had excellent results, while the remaining patient has had to resort to enemas on several occasions since operation. The period of follow-up in these cases ranges from 6 to 48 months. The saving of the rectum is of importance, because it eliminates damage to the nervi erigentes, which is a deterrent to the acceptance of operative procedures in which the rectum is removed.

NEUROLOGY & PSYCHIATRY

Medical Tests for Detecting Latent Epilepsy and Fluctuations in the Level of Consciousness. P. M. van Wulfften Palthe. J. Aviation Med. 25:275-283 (June) 1954 [St. Paul, Minn.].

Some candidates for training in aviation deliberately try to conceal the presence of grand mal and absences and allied disturbances of consciousness. Certain persons are unconscious of their condition and others do not realize the significance of fainting spells, dizziness, and syncopes. Van Wulfften Palthe of the Netherlands Aero-Medical Center discusses the nature and value of a test, which was adapted by Wiersma from a test that Bourdon had devised to measure concentration of attention. On a sheet of paper a standard configuration of dots or stipples are printed in 50 consecutive lines, each line containing the same number of three, four, and five stipple diagrams, differently shaped. The person tested must cross out as quickly and as accurately as possible all the "fours." The time per line, the total time, the number of mistakes and omissions, and the spreading of the times for every separate line—the dispersion—are the significant factors. Not only is attention measured but also awareness and alertness. Moreover, the degree of application to a tedious and seemingly infantile or senseless task proved to be an important factor in judging a personality. The rhythmical crossing-out movements appeared to put some subjects into a hazy, dream state. Now, in the era of electroencephalography and of refined psychological and complicated psychotechnical examinations, the author still prefers the Bourdon-Wiersma test for confirmatory evidence. In groups of candidates who were tested by selection board methods and groups the author examined with the stipple sheets, it happened that in 59% the qualification of the selection board agreed with the results of initial flight training, while the stipple sheet test gave concurrence in 78%. Abnormalities in the electroencephalograms are sometimes found when subjects fast for 12 hours or more. The author suggests that flight surgeons should stress the importance of a good carbohydrate breakfast for pilots and of the avoidance of long intervals between meals. He also discusses intermittent sensory stimuli and reviews a case of photogenic epilepsy, which demonstrated the remarkable influence of intermittent light stimuli on cerebral activity in some persons. Working concurrently with electroencephalography and the stipple sheet test, the author also found that the test registered a lowering of consciousness provoked by the test itself. During approximately 15 minutes there is a kind of feed back to the subject of his intermittent motor actions with a definite rhythm (cortical impulses from the visual area induce the movements of the hand and proprioceptive stimuli originated there and traveling along the pathways of sensibility reach the upper brain stem) and this led after a while to a lowering of consciousness manifesting itself in irregularity and slowing. Reexamining all the collected data of the Bourdon-Wiersma test on epileptics, it could be shown that slowing and irregularity occur only after the first 10 lines. The most characteristic feature in all kinds of epilepsy is the wide dispersion curve and the dispersion width, i. e., the spreading of the last 40 lines was about 50% greater than that of the first 10.

Penicillin Treatment of General Paresis: A Clinicoanatomic Study. A. J. Gianascol, G. D. Weickhardt and M. A. Neumann. Am. J. Syph. 38:251-269 (July) 1954 [St. Louis].

Fourteen patients with general paresis were given a course of 6,000,000 units of aqueous sodium penicillin intramuscularly within a 30 day period. Twenty-five thousand units were given every three hours. A lack of uniform correlation between clinical course, laboratory data, and the neuropathological abnormalities was evident. Ten patients were of the simple dementing paretic type, one patient had juvenile paresis, one showed manic-grandiose features, and two had a schizoid type of reaction. All patients had a strongly positive reaction to the Kolmer test except two, in whom this test was negative and remained so for the duration of hospitalization. Five patients had negative results after treatment from the serologic blood tests for syphilis. All patients had on admission positive spinal fluid tests for syphilis and first-zone colloidal gold curves. The follow-up spinal fluid findings of all patients showed a decrease in the white blood cell count and protein, followed by a slow reversion of the spinal fluid test for syphilis and colloidal gold curve to normal. All patients died, and the interval between treatment and death varied from 4 to 85 months. Necropsies revealed minimal macroscopic changes in the brain. There was a persistence of a meningeal fibrosis with minimal lymphocytic and plasma cell infiltration, persistence of a prominent marginal gliosis, persisting evidence of cortical neuron loss, and, in many cases, minimal to moderate disturbance of the architecture of the cortex. Astrocytosis and microglial reaction including presence of rod cells may persist to a minimal and, less frequently, a moderate degree. Perivascular infiltration gradually subsided as the time interval between treatment and death lengthened and was not present in any patient who died 42 or more months after treatment. Proliferation of capillary endothelium may persist in a minimal amount after treatment. As the interval between treatment and death lengthened, the neuropathological findings approached those of inactive paresis, and, after 38 months, there was no evidence of activity of the syphilitic process in the brain.

Central Nervous System Complications Resulting from Penicillin (Cerebral Drug Allergosis and Herxheimer's Reaction). G. Huber. Deutsche Ztschr. Nervenh. 171:460-473 (No. 6) 1954 (In German) [Berlin, Germany].

Huber reviews the literature on severe and fatal complications of the central nervous system following administration of penicillin. He observed two patients who died from central nervous complications following intramuscular injection of penicillin. A woman, aged 39, with trophic ulcers of the feet, was given penicillin for a complicating cellulitis. After the third intramuscular injection of penicillin, loss of consciousness, convulsions, and an urticarial exanthem developed, and death followed within four days. Study of the brain at necropsy revealed edema, diapedetic hemorrhages, and parenchymal lesions. The cerebral syndrome was ascribed to the penicillin, because the pathological changes in the brain were the same as those seen after etiologically established drug disease. The allergic nature of this reaction is established by the occurrence of a fatal cerebrospinal complication following the administration of a drug that previously had been tolerated in the same dose and mode of application, by the accompanying urticarial exanthem, and by morphological changes seen in allergic reactions. It is assumed that in the treatment of the trophic foot ulcers, which had been treated for years with powders and ointments, some of which may have contained penicillin, sensitization to penicillin had been produced. A woman, aged 55, with taboparesis, after an intramuscular injection of one million units of depot penicillin, had convulsions 10 hours later, rise in temperature, loss of consciousness, and motor unrest. Death followed eight days later with signs of central failure of circulation and respiration. The clinical and morphological aspects of this case indicate that the central nervous system was damaged by the penicillin. The author felt that in this case a Jarisch-Herxheimer reaction rather than allergy to penicillin was involved. That reaction is elicited by a sudden and massive destruction of spirochetes, that is, by a hypersensitivity to spirochetes and their endotoxins. As happened in this case, the Jarisch-Herxheimer reaction occurs at the onset of penicillin therapy of paresis in the form of fever, resulting from the toxic effects of the spirochetal protein. If hypersensitivity plays a part, then sensitization was produced against spirochetes, not by the spirocheticidal drug. The author emphasizes that in neurosyphilis penicillin therapy should be begun with slowly increasing doses or should be preceded by treatment with heavy metals.

Poliomyelitis: XII. Clinical Evaluation of Hypothalamic Involvement. I. A. Brown and H. Berris. A. M. A. Arch. Neurol. & Psychiat. 72:60-72 (July) 1954 [Chicago].

The hypothalamus shows evidence of microscopic damage in 85% of the cases of bulbar poliomyelitis. Clinical evidence of severe hypothalamic involvement in this disease is manifested by aberrations in temperature regulation, water exchange, carbohydrate metabolism, cardiovascular control, and gastrointestinal activity. Since a large number of patients with bulbar poliomyelitis do have definite damage to the hypothalamic nuclei, one would expect many of the recovered patients to show some clinical evidence of such involvement. In previous publications a test battery was described in an attempt to evaluate the hypothalamus through clinical and laboratory means The purpose of this communication is to reevaluate the test battery as an index of hypothalamic involvement and to determine whether or not such a battery can have any prognostic significance. The test battery of 12 tests was given to 47 patients with poliomyelitis, of whom 31 had bulbar and 16 had spinal involvement. Included in this battery were tests for postural adaptation, sweating, water exchange, carbohydrate metabolism, and endocrinopathic evaluation of hypophyseal-adrenal-thyroid relations. The effect of methacholine (Mecholyl) chloride was also studied. Fourteen patients with varying neurological disturbances and six normal subjects were used as controls. Although the relatively small average number of abnormal tests in the bulbar group is disappointing in view of the high percentage of cases with hypothalamic damage, this is merely the reflection of both the inadequacy of the individual tests and the inability to correlate microscopic changes with the degree of cellular function or dysfunction. Such a battery in its present form has little value as an index of hypothalamic function in poliomyelitis. On the other hand, the presence of more abnormalities in the poliomyelitis groups than in the normal control group suggests that a battery has merit and that as a weapon of diagnostic and prognostic aid it should not be abandoned. Consideration of the results of this preliminary experiment dictates a revision of this test group to include more informative tests and improvements in the technical performance of the old ones. A revised test battery includes the following tests: (1) water metabolism, to be evaluated by means of the hypertonic saline and nicotine tests (this will evaluate the supraoptic-hypophyseal system); (2) adrenocortical relationships, to be evaluated by means of 17-hydroxycorticoid urinary excretion; (3) continued testing of the blood glucose metabolism, but with the use of intravenously administered dextrose; (4) atropine test, outlined by Hoffer; (5) evaluation of emotional responses; and (6) determinations of serum protein-bound iodine.

Psychiatric Problems in Aging with Reference to Aero Medicine. *J. D. Moriarty.* J. Aviation Med. 25:221-226 (June) 1954 [St. Paul].

Ordinarily the age of a person refers to the number of birthdays that he has had. However, the psychiatrist must consider his patient from the standpoint of at least four referents: the chronological age, the physical or physiological age, the mental age, and the emotional age. These four types of ages must be considered in arriving at an estimate of the composite picture, which may be termed the functional age. Illustrative cases of pilots are presented to show that each individual case requires careful evaluation by somewhat flexible rather than arbitrary standards. Management, as well as the pilots, have a large stake in providing a suitable transition for the older pilots to jobs requiring judgment, maturity, and experience but less active participation in arduous flying chores. A well-defined plan for retirement at a suitable age, flexibly determined in the individual case, is important for maintaining morale and good motivation in the active pilot group.

GYNECOLOGY & OBSTETRICS

Problem of Toxoplasmosis in Pregnancy and Problem of Specificity of Serologic Examinations of Infected Mothers. W. Dontenwill and L. Finke. Medizinische No. 26:906-909 (June 26) 1954 (In German) [Stuttgart, Germany].

In six of seven cases of suspected congenital toxoplasmosis in two stillbirths and in five infants who died within the first 109 days of life, the diagnosis was established partly by the demonstration of the causative agent and partly by the typical microscopic changes in the brain revealed by necropsy. Symptoms of hydrocephalus, convulsions, and deficient drinking were considered as characteristically sufficient for a tentative clinical diagnosis of toxoplasmic encephalitis, but in one case hydrocephalus and atrophy of the optic nerve were not confirmed on necropsy. All seven mothers had positive reactions to serologic tests for toxoplasmosis; the titer values of the Sabin-Feldman test varied from 1 to 25 to 1 to 200. Two of the mothers became pregnant again and were delivered of healthy infants. Treatment of the mothers with chlortetracycline (Aureomycin) did not exert any definite influence on the serologic findings. Only a temporary drop in the titer occurred after treatment, and that only in two cases. Differential diagnosis between birth trauma and congenital toxoplasmic encephalitis is particularly difficult in those cases in which the hydrocephalus is not pronounced. But even in the presence of hydrocephalus, which alone is not a definite symptom of toxoplasmosis, positive serologic findings in the mother cannot be considered as definitive proof of congenital toxoplasmosis. In several cases of hydrocephalus in which toxoplasmosis was suspected, malformations but not inflammatory changes were detected on necropsy as causes of the hydrops. Symptoms such as convulsions, deficient drinking, and disturbances of nutrition may be associated with birth trauma as well as with congenital toxoplasmosis. The demonstration of the causative agent in the cerebrospinal fluid is the only reliable aid in establishing the diagnosis. The authors emphasize their previous proposal that "suspicion of congenital toxoplasmosis" should be stated only in cases with a serologic diagnosis. The birth of two healthy children from mothers with a positive reaction to the Sabin-Feldman test (with one of the mothers having given birth to a previous infant with established congenital toxoplasmosis) shows that a positive test does not necessarily hold out an unfavorable prospect of additional healthy children. The specificity of the test still remains highly controversial.

Carcinoma of Cervix: Use of Matched Pairs of Cases to Compare Treatment by Surgery or Radiation. M. Newton. Surg., Gynec. & Obst. 99:29-33 (July) 1954 [Chicago].

The recent revival of interest in the surgical treatment of carcinoma of the cervix uteri has raised the question of whether surgery or radiation is the better method of therapy in this disease. Newton matched 15 patients with early carcinoma of the cervix, who were treated by radical surgery case for case, with a similar series of 15 patients treated at the same institution and during the same period of time by radiation. The method of comparison by matched pairs was selected because it obviates some of the difficulties encountered with other methods. In using this technique, two patients treated by different methods are matched for as many as possible of the characteristics likely to cause variation in response. Each pair represents a separate experiment. Thus, a smaller number of cases is needed to obtain meaningful results. The matching did not eliminate all the variables that might influence the patient's response to treatment. However, examination of the pairs of cases in relation to associated physical abnormalities, associated pelvic abnormalities, and bodily habitus indicated that the two groups were similar. Surgical treatment consisted of a radical panhysterectomy with removal of the parametria, upper vagina, and iliac and obturator lymph nodes. Twelve patients were operated upon from an abdominal approach and three from a combined abdominovaginal approach. In the 15 radiation cases treatment consisted of a course of x-radiation, followed by radium application to the cervix. X-radiation was given through external portals in all 15 cases and through an additional intravaginal portal in 13. The effect of variations in technique was that radiation treatment tended to be more nearly ideal than surgical treatment. If both methods were equally effective, one might have expected that the results obtained by surgery in this series would have been worse than those obtained by radiation. This was not the case. Survival and incidence of recurrence were similar in both groups. Although the follow-up period was only for an average of 26 months, there is no reason for supposing that the later results will differ greatly from the early ones.

Treatment of Case of Pregnancy Toxicosis with Hexamethonium Iodide. J. J. Figoureux. Belg. tijdschr. geneesk. 10:528-540 (June 1) 1954 (In Flemish) [Leuven, Belgium].

The woman reported on by Figoureux was 35 years old, had been married for three years, and was pregnant for the first time. Her menstrual periods had been regular, occurring at 28-day intervals and lasting three days. Her last menstruation had occurred on Aug. 12, 1952, and she had felt life in January, 1953. Beginning with the third month of pregnancy she had been examined by her physician at regular intervals. Salt-free diet had been prescribed because of a somewhat increased blood pressure, and, on Feb. 18, 1953, that is, five days before hospitalization, a fruit diet had been ordered, because of a sudden rapid rise in blood pressure, albuminuria, and edema. Immediately after the examination the patient was given an intramuscular injection of hexamethonium iodide, and in response to this the blood pressure decreased within half an hour from 215/120 mm. Hg to 162/115 mm. Hg. After 90 minutes the pressure was 145/100 mm. Hg; it remained at 160/120 mm. Hg for some time, and then increased again. About seven hours after the first injection, a second injection was given and the blood pressure again decreased. During the next few days various doses were tried with the aim of stabilizing the pressure at about 160/110 mm. Hg. For a number of days the patient was given 10 mg. of hexamethonium iodide at 2 and at 6 a. m., 20 mg. at 10 a. m., and 10 mg. at 2, 6, and 10 p. m. The edema subsided, but, three weeks after hospitalization, albuminuria increased rapidly and blood pressure became again irregular. Four days later albuminuria was severe, and edema and blood pressure increased despite injection of hexamethonium iodide. Since the pregnancy had persisted for seven full months and the infant could be expected to be viable, a cesarean section was performed. The patient received the last injection of hexamethonium one hour before the operation. The operation was without complication and the premature infant seemed well at first but died 14 hours later. The author concludes that, although injections of hexamethonium may reduce the blood pressure in eclampsia and defer the toxicosis, it cannot completely control the toxicosis. He doubts that this treatment will make it possible to bring a patient with pregnancy toxicosis to term. He feels that it is a symptomatic remedy that can be added to existing ones.

Treatment of Pregnancy Toxicosis. J. Janssens. Belg. tijdschr. geneesk. 10:521-527 (June 1) 1954 (In Flemish) [Leuven, Belgium].

Janssens defines pregnancy toxicosis as a syndrome that complicates pregnancy or the early puerperium and that is characterized by one or more of the following symptoms: edema, hypertension, proteinuria, convulsions, and/or coma. In the differentiation between eclampsia and hypertension the cold pressor test (Hines and Brown), the use of tetraethylammonium, Veratrum viride, and the balance test are helpful. The treatment is reviewed first in general and then with regard to the three forms of toxicosis (preeclampsia, eclampsia, and essential hypertension). Rest and hospitalization, dietetic measures, drugs, and the interruption of pregnancy are evaluated. The author advances no new theory and knows of no drug that is generally effective in toxicosis of pregnancy. Cortisone, corticotropin, heparin, penicillin, and various others have been tried in recent years, but without convincing results. The most effective drugs together with data on their dosage, complications, and antidotes are discussed. The sedative drugs evaluated include: magnesium sulfate, morphine, the barbiturates, meperidine, and others. Aminophylline, theophylline, ammonium chloride, and glucose solution are the diuretic drugs evaluated. Diethylstilbestrol is mentioned as a drug that might improve the placental function and improve the production of progesterone. The use of ion exchange resins, particularly those of the carboxylic and sulfonic groups are discussed, but a warning is issued about the danger of potassium deficiency and gastric disturbances. Discussing the antihypertensive drugs, the author comments on the ganglionic blocking agents, particularly hexamethonium, and on the drugs with vasomotor action, Veratrum viride and its derivatives, and hydralazine (Apresoline) hydrochloride. Although pregnancy toxicosis is decreasing, chiefly as the result of better prenatal care, it still constitutes a great problem in that 25% of maternal mortality can be attributed to toxicosis; 7% of pregnancies become complicated by toxicosis, and the perinatal infant mortality ranges from 7 to 10% in the nonconvulsive forms of toxicosis and from 30 to 50% in eclampsia; furthermore, the maternal mortality is 10% in eclampsia.

PEDIATRICS

Acute Infectious Lymphocytosis: Report of an Outbreak. H. E. Scalettar, J. E. Maisel and M. Bramson. A. M. A. Am. J. Dis. Child. 88:15-24 (July) 1954 [Chicago].

A case of acute infectious lymphocytosis, or, as it is referred to in the foreign literature, Carl Smith's disease, in a 3-year-old boy is described. The child was admitted to the hospital from the home of the Convent of Sisters of Mercy in Brooklyn, N. Y., because of a generalized convulsion and stupor. The temperature was normal, the pulse rate 125 per minute, respirations regular, and the blood pressure 85/50 mm. Hg. No skin rashes or petechiae were noted, and there was no evidence of head trauma. The neurological examination was normal, except for a positive Babinski sign bilaterally. The child recovered from the postictal state within an hour after admission and did not show further evidence of any neurological abnormality while in the hospital. On the 10th hospital day, a follow-up blood cell count revealed a pronounced lymphocytic leukocytosis. During the following six weeks periodic blood cell counts and a bone marrow examination were made. The bone marrow was normal except for an increased number of lymphocytes. The child was asymptomatic throughout the entire course of the disease. After the diagnosis of infectious lymphocytosis was made in this patient, the home of the Convent of Sisters of Mercy was visited, and white blood cell counts and blood smears were taken from the entire population of the home. Of the 60 children in the dormitory, 9 other children had findings compatible with acute infectious lymphocytosis. These were considered on the basis of a leukocytosis due to an increase of normal or small lymphocytes, lasting more than 14 days. Seven other children were thought to be in the recovery phase of the disease on the basis of one or more white blood cell counts of more than 15,000 per cubic millimeter of blood with 50% lymphocytes, not lasting 14 days, but having more than 500 eosinophils per cubic millimeter. The patients with the acute disease were removed to the hospital. Prior to admission, all of these patients had mild respiratory infections. No lymphadenopathy, hepatomegaly, or splenomegaly were noted in any of the children. Several days after the admission, seven of the nine children had a mild but foul-smelling diarrhea that responded to general supportive and symptomatic treatment and subsided within 48 to 72 hours. Six of the nine patients had a peak white blood cell count of 80,000 per cubic millimeter, and three had one of 60,000 per cubic millimeter. Lymphocyte peaks ranged between 85 and 96%. The average duration of the leukocytosis was approximately 30 days. Sternal bone marrow aspirations were performed in six patients. There was a notable increase in the number of lymphocytes and a slight increase in eosinophils. Removal of the children with the acute disease to the hospital perhaps caused the outbreak to terminate prematurely. Blood cell counts repeated on all the remaining children in the dormitory in which the first patient had slept three weeks after admission of the patients with acute disease to the hospital did not reveal a single new case. Because of this, the incubation period of the disease could not be determined. Most of the patients in eight previously reported epidemics of infectious lymphocytosis (five in the United States, two in England, one in France) were devoid of positive findings. Absence of lymphadenopathy and splenomegaly were rather characteristic. Despite the presenting symptomatology, at times involving the respiratory, gastrointestinal, and central nervous system, the benign nature of infectious lymphocytosis is stressed.

Kerosene Poisoning in Young Children. J. C. Foley, N. B. Dreyer, A. B. Soule Jr. and E. Woll. Radiology 62:817-829 (June) 1954 [Syracuse, N. Y.].

Over a nine year period (1944-1953), 101 children between the ages of 8 months and 2 years were admitted to five hospitals in northwestern Vermont after the ingestion of kerosene. Four of these cases are described, including the two fatalities of the series. From studies on rabbits, it is concluded that, in kerosene poisoning, there are two major effects of pathological importance: (1) a violently irritating effect on the alveolar walls of the lungs, with rapid development of a chemical bronchopneumonia that prevents the proper interchange of gases, with resulting respiratory failure if the process is sufficiently widespread; and (2) a depressing effect on the brain, resulting from absorption of toxic material from the alimentary tract and possibly also from the respiratory tract. If pneumonia develops, it is usually bilateral and may be widely disseminated; it reaches its peak within two to eight hours after the child's exposure to kerosene, with gradual regression after this time. Thirty patients were followed by means of chest roentgenograms. Only one showed what could be considered definite abnormalities, with prominence of bronchovascular markings in the basal segments of the right lower lobe suggestive of bronchiectasis. Nine other children showed equivocal minor prominence of markings in the lower lung fields, and 20 were definitely normal. In view of the highly toxic effects of even small quantities of kerosene introduced intratracheally, it is probable that in most cases gastric lavage should not be done at all. In cases in which gastric lavage is decided on, it should be performed only after the introduction of an intratracheal tube with balloon inflated. The public should be educated regarding the grave dangers to young children from drinking or aspirating kerosene.

Hydrocarbon Pneumonitis Following Furniture Polish Ingestion: A Report of 15 Cases. J. W. Griffin, C. W. Daeschner, V. P. Collins and W. L. Eaton. J. Pediat. 45:13-26 (July) 1954 [St. Louis].

Pneumonitis developed after the ingestion of red furniture polish in 15 children between the ages of 11 and 24 months. Mineral seal oil was the basic constituent of the red furniture polish marketed under various trade names. To this hydrocarbon base, which may constitute from 20 to 99% of the finished product, various odorizing and coloring agents such as cedarwood, methyl salicylate, turpentine, oil of camphor, oil of cedar leaf, lemon oil, and traces of aniline may be added. Mineral seal oil is a light petroleum oil obtained as a fraction of distillate from crude petroleum in the range of 500 to 700 F. The unsaturated aliphatic hydrocarbons are largely removed by acid washings. The resulting product is composed principally of saturated aliphatic hydrocarbons of a higher molecular weight than those characteristic of gasoline or kerosene. The quantity of furniture polish ingested varied from ½ to 4 oz. Coughing and gagging were clearly established in 11 patients and were indefinite in 4. Spontaneous vomiting or gastric lavage was described in nine patients. Two patients died in coma on the sixth and third day, respectively, after admission to the hospital, and in these two patients vomiting was induced by vigorous digital manipulation. Although the presenting symptoms were usually those of a disturbed sensorium, the pulmonary disease was the major factor in the duration and severity of the patient's illness. A febrile course characterized by spiking temperatures of 102 F (39 C) to 106 F (41 C) with a mean duration of about seven days in the nonfatal cases was observed in 14 patients. In general, the course of the illness was more severe than that observed in children who ingest other hydrocarbon products such as kerosene or lighter fluid. The initial radiographic finding may only be a generalized emphysema. As early as two hours after ingestion of the furniture polish, the developing peribronchial infiltration became evident, and as it mounted, the preservation of a clear zone of peripheral emphysema was distinctive. The inflammatory process reached its height about the third day and resolution required three to six weeks. Gastric lavage and induced vomiting should be avoided in the management of these patients, because of the danger of aspiration during the procedure. Treatment should consist of prophylactic antibiotics and general supportive measures.

Kernicterus Following Exchange Transfusion. D. A. McGreal. Lancet 1:1323-1325 (June 26) 1954 [London, England].

Sixteen infants with hemolytic disease of the newborn were given exchange transfusions. One died during the transfusion, and kernicterus developed in four, three of whom were premature babies. Two additional cases of kernicterus occurring after exchange transfusion with packed cells in mature infants are reported. The onset of abnormal cerebral signs was preceded in the four premature babies by steadily increasing jaundice, but only in one infant were repeated estimations made of the serum bilirubin level. It was 25 mg. per 100 cc. at the time of symptoms. The diagnosis was confirmed by necropsy in one of the four premature patients, while in the other three it rested on the clinical findings. An increased serum bilirubin level that may be toxic to nerve tissue and increased vascular permeability in hemolytic infants and in nonhemolytic premature infants are considered as possible factors bearing on the production of kernicterus. The use of repeated exchange transfusions to keep the serum bilirubin levels low is mentioned.

Hirschsprung's Disease in the Newborn. R. R. Klein and R. A. Scarborough. Am. J. Surg. 88:6-16 (July) 1954 [New York].

Five case histories are presented of newborn infants with dilatation of the colon (Hirschsprung's disease). Three of them died. The main reason for the high mortality from this condition is that the proper diagnosis is not made early enough. Vomiting and abdominal distention, with deficiency of fecal output, are the first symptoms and are usually obvious within 24 to 48 hours after birth. A palpable narrowing of the rectal ampulla is often noted. Significant findings on roentgenologic examination include: (1) dilatation of both small and large intestine on the plain film, with absence of air in the rectum, (2) disparity in diameter between the rectum and the colon proximal to the obstruction by barium enema, and (3) poor evacuation, with retention of barium in the colon for at least 24 hours. The objective of treatment is correction of a functional obstruction of the distal colon and rectum; conservative treatment is justified as long as there is definite evidence of relief of this obstruction. When conservative management does not successfully relieve obstruction and reestablish normal digestive function within a week, surgical intervention is indicated. Colostomy is the procedure of choice, with the preferable site immediately proximal to the aganglionic segment. Primary resection of the aganglionic area is inadvisable in the treatment of this disease in the newborn infant. Multiple biopsies of the wall of the rectum and colon at laparotomy are advocated in order to establish diagnosis unequivocally, to verify the presence of normal ganglia at the level of colostomy, and to aid in the planning of future resection. Immediate frozen section examination can adequately demonstrate the presence or absence of ganglia. It is recommended that definitive surgery, with resection of the aganglionic segment and restoration of normal intestinal continuity, be postponed until the second or third year of life. Dilatation of the colon should be considered in the case of every infant with symptoms or signs of intestinal obstruction, particularly when no mechanical block is demonstrated radiologically.

Syndromes of Adrenal Cortical Hyperfunction Caused by Tumors in Children. M. Bernheim, P. Wertheimer, P. Guinet and others. Semaine hôp. Paris 30:2597-2604 (June 25) 1954 (In French) [Paris, France].

This paper is based on detailed case reports of three children with adrenal cortical hyperfunction. The first was a girl 17 months old in whom clitoral hypertrophy and pubic hair had existed since birth. Her adrenal cortical hyperfunction (Cushing's syndrome) was found to be caused by a large, malignant, basophilic tumor of the right adrenal gland. It is possible that this tumor developed in utero. The child died the day after surgical removal of it. The second case was that of a boy, one year old, with macrogenitosomia caused by a malignant tumor of the adrenal cortex, which at operation was found to be the size of a grapefruit. This child died nine days after surgical intervention. He had been abnormal in respect of weight gain since birth; the other symptoms appeared at the age of 9 months. The third case was that of virilism in a girl 6½ years old. Removal of an adrenocortical tumor cured her symptoms (frequent headaches, sensitivity to cold, psychic irritability, elevation of 17-ketosteroid excretion, and hyperglycemia), although some clitoral hypertrophy and pubic hair remained. These adrenal tumors in children are characterized by their marked malignancy and their ability to secrete both metabolic and sex hormones. Pathological examination of the three tumors, which were all of trabecular structure, did not reveal an essential histological difference among those causing different syndromes. The authors attribute their successful case to careful observance of Wilkins' technique of preoperative preparation. This treatment aims to give the patient a stock of hormones adequate to tide him over until the other adrenal begins secreting again. Large doses of cortisone are used for this purpose. Desoxycorticosterone acetate is contraindicated if the blood pressure is low. Sodium chloride must be administered to counterbalance postoperative insufficiency. Proper ion and osmotic balance must be maintained. The remaining gland must be encouraged to take up its proper secretory function after operation; to this end, decreasing doses of cortisone are given and stopped when the response to the Thorn test is favorable.

Incidence, Prognosis, and Treatment of Nephrotic Syndrome. J. Friderich, A. Prader and G. Fanconi. Helvet. paediat. acta 9:109-126 (June) 1954 (In German) [Basel, Switzerland].

Between 1924 and 1953, 29 girls and 55 boys with a definite nephrotic syndrome were admitted to the childrens' hospital in Basel, Switzerland. The incidence of the syndrome was greatest in children between the ages of 3 and 4 years. The ratio of girls to boys was one to two. Ten of the 84 patients had a familial nephrotic syndrome. Of 27 children in seven families, 17 children had the syndrome. A congenital onset was observed only in familial cases. Of 68 patients studied with respect to allergic diseases associated with the nephrotic syndrome, 17 (25%) had allergic diseases, with bronchial asthma occurring in 11, urticaria in 4, eczema in 3, and hay fever in one. In 23 patients (34%), a member of the family had an allergic disease. Of 64 patients followed up for five or more years, 25 (39%) died within from two months to four and a half years after the onset of the nephrotic syndrome. All the patients were treated by bed rest and were placed on a salt-free and low fat diet, rich in proteins and vitamins. Eighteen children between the ages of 3 months and 9 years received 50 courses of corticotropin, and 11 between 3 and 8 years were given 12 courses of amithiozone (Conteben) in an attempt to remove the edema. *Corticotropin was given intramuscularly in doses of 40 to 80 mg. daily, in* four divided doses for one to 10 days or a single dose of 40 to 80 mg. of repository corticotropin intramuscularly for 6 to 10 days. Amithiozone was given orally in doses of 0.5 to 3 mg. per kilogram of body weight for 15 to 35 days. Complete disappearance of edema was obtained with 28 of 50 courses (56%) of corticotropin in 12 of the 18 patients. Simultaneous disappearance of albuminuria and dysproteinemia was obtained with five courses of corticotropin. Complete disappearance of edema was obtained with 3 of the 12 amithiozone courses, while partial disappearance of edema was obtained with three other of these courses. Undesirable side-effects of corticotropin therapy consisted of a temporary rise of rest nitrogen and of blood pressure. A transitory thrombosis occurred in one patient and an allergic rash in two others. Increased urobilinogenuria was observed in several patients treated with amithiozone; treatment with amithiozone had to be discontinued in one patient because of rise of rest nitrogen, urinary sediment becoming worse and edema increased. Treatment with corticotropin may have a beneficial effect on the course of the nephrotic syndrome but will not shorten its duration. With adequate dosage, edema may disappear completely in 80% of the treatment courses and treatment may be repeated several times. Simultaneous administration of antibiotics and of 1 gm. of potassium chloride daily should not be omitted. *A remission may thus be obtained in* some cases, which may last several months and can result in a cure. *Corticotropin therapy is of similar importance for the* nephrotic syndrome as for rheumatic disease. The number of patients with the nephrotic syndrome treated with amithiozone is too small for definite evaluation of the drug, but the results obtained were not inferior to those obtained with corticotropin.

Leukemic Xanthomatosis. *P. Freud, A. Plachta, F. D. Speer and A. L. Luhby. A. M. A. Am. J. Dis. Child. 88:43-61 (July) 1954 [Chicago].*

The occurrence of a heretofore unknown disease, leukemic xanthomatosis, is described in a boy of Puerto Rican extraction who was 2 years old when xanthomatous lesions were first noticed. Twenty-five months after these lesions had appeared, the development of visceral reticuloendotheliosis was detected on biopsies of lymph nodes. A chronic leukemic myeloid response developed rather early and was already suspected one year after xanthomatous lesions had been noticed. At the age of 2½ years, when the patient was convalescing from an upper respiratory tract infection, his peripheral white blood cell count was 13,700 per cubic millimeter with a differential count showing 71% polymorphonuclear leukocytes, of which 41% were staff cells and 25% eosinophils. During the next 13 months, while the patient was clinically well but for occasional rather severe upper respiratory tract infections, the peripheral white blood cell count varied from 27,000 per cubic millimeter to 141,000 per cubic millimeter, with immature myeloid cells always present. Occasionally there were showers of abnormal monocytes with many primitive, large monocytoid cells with indented excentric nuclei. When x-ray irradiations were instituted, the white blood cell count fell to 21,800 per cubic millimeter and the platelets from 270,000 to 80,000 per cubic millimeter. At the same time, the hemoglobin rose from 46% to 84% and the red blood cell count from 2,350,000 to 4,690,000 per cubic millimeter. Three months later, there was increasing hepatosplenomegaly, and another four months later the patient did no longer respond to x-ray irradiation. Urethane proved ineffective, but with triethylenemelamine the white blood cell count decreased, although the size of the liver and spleen did not. Temperature elevations occurred and could not be influenced by antibiotics and chemotherapy, and the patient died at the age of 5 years and 3 months. Necropsy was performed and revealed that the lymph nodes, spleen, liver, lungs, and many other viscera were affected by widespread reticuloendotheliosis. There were many primitive mesenchymal foam cells with high cholesterol content, showing the histiocytic orientation of these cells, which were enmeshed in a dense argyrophilic reticulum. The differentiation of the mesenchymal embryonic cells into histiocytes on the one hand and into hematemic elements on the other seemed to establish a link between the aleukemic forms of systemic reticuloendotheliosis and the leukemias. Opinions were divided as to the problem whether in a case of xanthomatosis leading to the development of leukemic phenomena there is still only hyperplasia or this condition should be regarded as neoplasm. Numerous inclusion bodies were observed in all of the affected organs. No virus studies were done, because the inclusion bodies were only discovered at necropsy. A virus was probably the causative agent. However, inclusion-body disease or a superimposed virus infection cannot be excluded.

Extreme Types of Rheumatic Carditis in Young Children Treated with Cortisone. H. Diedenhofen. *Medizinische No. 26:912-914 (June 26) 1954 (In German) [Stuttgart, Germany].*

The course of rheumatic carditis in young children treated with cortisone varies considerably as is illustrated by two cases in girls. The first patient had the clinical picture of rheumatic pancarditis with congestive bronchitis and enlarged liver. The pulse rate was increased to 164 beats per minute, there was meteorism, and the spleen was considerably enlarged. Aminopyrine proved ineffective. A proprietary preparation of lanatoside C (Cedilanid) was given cautiously and 130 mg. of cortisone was given daily for seven days. In addition aminopyrine and penicillin were given. Temperature was restored to normal by lysis, respiration became more quiet and decompensation subsided. Roentgen examination showed a nearly normal cardiac shadow. At the height of the disease, cortisone caused a favorable turn after all other therapeutic procedures had failed. The second patient was admitted to the hospital with a diagnosis of acute rheumatic fever. Rheumatic nodules of the size of a pea or of a cherry were observed at the joints of the hands and legs and at the occiput. The heart sounds were accelerated, and a moderate systolic murmur maximal at the apex was heard. The cardiac shadow was enlarged on roentgenologic examination, and myocardial damage was revealed by the electrocardiogram. The rheumatic nodules increased in number despite the treatment with aminopyrine and Cebione, a proprietary preparation of vitamin C, and local antiphlogistic measures. The temperature was subfebrile. Small doses of cortisone were given, but symptoms of pneumonia developed on the third day of treatment. Additional high doses of penicillin were given and the consolidation regressed. The rheumatic nodules subsided, the erythrocyte sedimentation rate was restored to normal, but the general condition of the child did not improve. Roentgenologic and electrocardiographic examinations revealed progressive myocardial impairment. A sudden rise in temperature occurred when penicillin was discontinued after 11 days, while administration of cortisone and aminopyrine was continued. There was an increase in the erythrocyte sedimentation rate and anemia, and the shift in the blood picture to the left became more pronounced. The child was deteriorating rapidly. Cortisone was discontinued, and culture from the blood showed Streptococcus viridans on blood agar. With definite regression of the rheumatic cutaneous and joint phenomena the rheumatic endocarditis was transformed into a bacterial endocarditis, a rare occurrence in young children. The size of the spleen increased and despite intensive treatment with antibiotics and aminopyrine death resulted from pancarditis and severe cardiac decompensation six days after the appearance of Streptococcus viridans. It is suggested that cortisone may have favored the transition of rheumatic into bacterial endocarditis. Cortisone definitely did not prevent the dissemination of Str. viridans. Aminopyrine with its derivatives remains the drug of choice in the treatment of rheumatic carditis, since in principle its effect is similar to that of cortisone without producing the complex side-effects of the hormone.

Duodenal Ulcer in Children with Hemorrhage as the Presenting Symptom: Report of Three Cases. E. L. Marcus. J. Pediat. 45:75-79 (July) 1954 [St. Louis].

Three boys, aged 10 years, 13 years, and 7 years respectively, in whom peptic ulcer was diagnosed with the aid of fluoroscopy and roentgenograms in two, and by an exploratory laparotomy in one, presented similar major complaints (before the admission to the hospital) related to bleeding as shown by either vomiting of blood or by loss of blood in the stool. The fact that four separate clotting time determinations were abnormally prolonged in the 7-year-old boy made the author consider an additional diagnosis of hemophilia. This diagnosis was not proved by definite blood studies, but the prolongation of the clotting time might be considered a factor in the recurrent bleeding of the peptic ulcer demonstrated by roentgenogram. While there was a previous complaint of abdominal pain in two of these three patients, it was not the striking feature of the history. The symptoms of peptic ulcer in children of the older age group are very similar to those of the adults with this condition. First symptoms, therefore, may either be the traditional recurrent pain in the upper part of the abdomen or gastrointestinal bleeding as demonstrated by the author's three cases. The psychiatric consultant who saw these three boys and their parents observed certain features common to these patients. In all of them there were multiple inner tensions present, and the children tended to keep things to themselves. An attempt was made to evaluate the home situation and the families of these children in order to unearth some of the tensions that might be present. None of these children was considered amenable to long-term psychotherapy, but the mother of one of the patients was observed to be disturbed to such an extent that a program of psychiatric assistance was offered.

Influence of Varicella and Measles on Tuberculous Meningitis in Course of Treatment. M. Gustin Kairus and J. E. Howard. Rev. chilena pediat. 25:124-128 (March) 1954 (In Spanish) [Santiago, Chile].

Observations were made on a group of 171 children with tuberculous meningitis treated with streptomycin alone, or combined with isoniazid and *p*-aminosalicylic acid. Varicella developed in 23 and measles in 8. The influence of the intercurrent disease on tuberculous meningitis was observed; the curve of fever of the intercurrent disease, the changes in the cerebrospinal fluid, and the sedimentation rate of the erythrocytes were compared with controls. The group of controls consisted of patients of the same age, with tuberculous meningitis of the same duration and with similar pulmonary lesions. The examinations were repeated at 10-day intervals for two months after onset of the intercurrent disease and the changes compared with the conditions that existed one month, 20 days and 10 days prior to the onset of the intercurrent disease. Examinations of the controls were made at the same periods. The authors found that neither varicella nor measles have any influence on the clinical course and meningeal involvement of tuberculous meningitis. The prognosis of tuberculous meningitis is not changed by the development of varicella or measles. In the continuation of treatment of tuberculous meningitis after the development of either varicella or measles, neither greater doses of specific drugs nor administration of the drugs for a longer period of time is necessary.

Do Antirachitic Measures Influence the Eruption of Deciduous and Permanent Teeth and Closure of the Fontanelles? H. Oster. Ztschr. Kinderh. 74:582-592 (No. 6) 1954 (In German) [Berlin, Germany].

The earliest, the average, and the latest dates of eruption of teeth before and after the introduction of rickets prophylaxis were compared. It was found that, since rickets prophylaxis has been established, the deciduous central incisor teeth in the lower jaw erupt, on the average, about one month earlier, but the date of eruption of the other deciduous teeth has remained unchanged. Closure of the large fontanelle likewise takes place noticeably earlier. Now about 25% of infants have a closed fontanelle at 9 months, whereas before the era of rickets prophylaxis this was the case in only 15%. About 50% of infants have the large fontanelle closed at one year and 77% at 15 months. The eruption of the permanent teeth begins at about the time of the so-called 6th year molars. The earliest date for this eruption is shortly before completion of the 5th year; between the 5th and the 6th year one-fifth of the boys and one-third of the girls have erupted 6th year molars. In general, tooth eruption takes place earlier in girls than in boys.

DERMATOLOGY

Chronic Discoid Lupus Erythematosus: Treatment with Daraprim and Chloroquine Diphosphate (Aralen). M. J. Tye, B. L. Schiff, S. F. Collins and others. New England J. Med. 251:52-55 (July 8) 1954 [Boston].

Daraprim (2:4-diamino-5-[*p*-chlorophenyl]-6-ethylpyrimidine) was given to five patients with chronic discoid lupus erythematosus. The initial dose was 25 mg. per week. The dose was then raised in two steps to 25 mg. per day. Two patients were treated for two months, and three for three months. There was no objective evidence of improvement. After discontinuation of Daraprim, four of these patients and 22 additional patients with chronic discoid lupus erythematosus were treated with 7-chloro-4-(4-diethylamino-1-methylbutylamino) quinoline (Chloroquine) in the phosphate form (Aralen phosphate). Two dosage schedules were used. On the first, 13 patients were treated with one tablet (0.25 gm.) four times daily for two days, one tablet three times daily for two days, and then one tablet twice daily; the dosage was then dropped in some patients to one tablet daily as the lesions cleared or were greatly improved. The remaining 13 patients were given one tablet (0.25 gm.) each, three times daily for two weeks, one tablet twice daily for one week, and then one tablet daily as a maintenance dose. In 13 of 26 patients, the lesions completely cleared, and the other 13 showed improvement continuing for six and seven months after institution of treatment. The greatest degree of improvement seemed to occur in the first month in some patients, and the rate of progress was slow but gradual for several weeks thereafter. There were three recurrences, and these patients were placed on maintenance therapy. Undesirable side-effects of the drug were observed in three patients; one had headache after three tablets daily, another complained of nausea and dizziness while receiving three tablets daily, and a third had nausea, dizziness and diplopia after two tablets daily. All symptoms disappeared when the dosage was decreased. After the paper was submitted for publication the lesions in 22 of the 26 patients cleared completely and remained clear after discontinuation of the drug for from a few weeks to several months. The remaining four patients showed progressive improvement but are still being treated.

"Why Doesn't the Worker's Skin Clear Up?": Analysis of Factors Complicating Industrial Dermatoses. G. E. Morris. A. M. A. Arch. Indust. Hyg. 10:43-49 (July) 1954 [Chicago].

Observation during the past 12 years of more than 3,000 cases of industrial skin diseases convinced Morris that there are at least 24 different causes of failure of recovery from occupational skin diseases. The first cause is failure, sometimes deliberate, to follow the physician's advice. The dermatologist questions the patient about contacts and then advises that the hands be kept out of hot water, kerosene, gasoline, furniture polish, dish-washing compounds, paint-washing compounds, and window-washing compounds; he warns the patient that almost any chemical that is strong can cause his eruption to persist. Such advice is a two-edged sword. If the patient chooses, he can avoid these chemicals and improve, but, should he desire to induce a flare-up, he has been given a key. Patients have used such advice to cause a skin disturbance to break out when appearing before an Industrial Accident Board. Another frequent cause is "over-treatment." Acute dermatitis will usually respond best to compresses, calamine lotion, and other simple measures. Many persons will apply one ointment after another, only to find that they are becoming more sensitized to more substances. The third cause for the continuation of an eruption is involved with "hardening"; by this is meant that a patient, by continued exposure to a substance, may build up an immunity to it, but there is always the patient who will get worse. A fourth factor is an incorrect diagnosis. Any dermatologist seeing large numbers of industrial skin eruptions is bound to make mistakes at times. Secondary bacterial infection of the occupational eruption is a fifth cause. As a sixth factor, the author mentions that antibiotics may be the cause of vesicular eruption of the hands on top of secondarily infected contact dermatoses. Dermatophytosis of the feet is another cause. Another factor is exposure at home: there is the patient who must clean the gasoline line of his car, or the man whose wife asks him to wash the windows with ammonia and who complies, not knowing that this is an irritating substance. A ninth cause for persistence of an eruption, or for an acute flare-up, is a serious nervous upset. As a 10th factor, prolongation of a dermatitis can be effected by an employer's "firing" a patient when he has a rash or by not rehiring a patient after his eruption has been cleared. Excessive heat or excessive cold and failure to follow the treatment prescribed are listed as factors 11 and 12. The 13th is that some patients receive almost as much money on workmen's compensation as they do while working. Another element is what can be called the "magic green salve" treatment; in Massachusetts this is called the lump-sum disposal of a case. The use of corticotropin, cortisone, or other steroid hormones should be looked into. The application of protective creams after an eruption develops is another point to be considered. Then there is the patient who is under treatment by two physicians at the same time without telling either of them that he is going to the other. An 18th reason is that a patch test may cause an acute flare-up of an eruption. A 19th factor is the patient with an allergic background. The 20th category consists of cases in which there is an accentuation of an existing skin disease by an occupational factor. A background of a focus of infection constitutes the 21st category. Still another factor is that, since nicotinic acid is known to be necessary for the nutrition of the dorsa of the hands and since riboflavin is known to do the same for the face, patients who are deficient in these vitamins frequently have eruptions in these parts that are delayed in healing. The continued wearing of work clothing saturated with the irritating substance, or failure to remove nickel, chrome, or rubber in patients sensitive to these substances are listed as factors 23 and 24.

Medicamentous Sleep Therapy in Management of Scleroderma and Related Clinical Aspects. R. Emmrich and H. Petzold. Deutsche med. Wchnschr. 79:1003-1007 (June 18) 1954 (In German) [Stuttgart, Germany].

Thirteen patients between the ages of 12 and 65 years, 10 with diffuse progressive scleroderma and 3 with localized sclerosing processes of the skin, were treated by sleep induced with drugs. On the first and second days of the treatment the patients were given two or three ampuls of Pantopon, a proprietary mixture of the hydrochlorides of opium containing 50% of anhydrous morphine hydrochloride, combined with scopolamine hydrobromide, intramuscularly. One ampul of this preparation contained 0.04 of Pantopon and 0.0006 of scopolamine hydrobromide. Occasionally one ampul of this compound also was given on the third day and several patients received a smaller dose of the compound and in addition a small dose of a proprietary preparation of phenobarbital (Luminal). On the third and fourth days, the patients were given injections of isotonic sodium chloride solution and sleep was maintained. Only in rare cases was the sleep extended beyond the fourth day. Three to four patients were placed together in a dark room. On the second day, profuse sweating occurred in nearly all patients, and it continued in some patients for several days. In most patients, the temperature rose on the second day, but was rapidly restored to normal. The favorable effect of the treatment on the skin became evident on the second day. Improvement progressed for about a week after treatment was terminated, and then it remained constant for weeks and even months. The skin became soft and the patient's condition tolerable. The erythrocyte count revealed an increase in hemoglobin and in the number of erythrocytes, particularly in patients with anemia. Changes observed in the leukocyte count consisted of an increase in cells with rod-shaped nuclei, relative lymphopenia, and later a lymphocytosis. These changes were interpreted in the sense of an acute-subacute inflammatory constellation, but were, in general, little pronounced and only temporary. The pretreatment anemia subsided. The medicinal sleep therapy is not an indifferent method and definite indications are required. It interferes considerably with the biological structure. Hospitalization of patients is required. The therapeutic sleep occupies a medium position between the natural sleep and a continuous anesthesia with exclusion of the deeper centers. The therapeutic effect depends on the depth of the sleep. The therapeutic sleep seems to be only the indicator for many central nervous changes. Besides the problem of the central nervous mechanism, there is the biochemical problem that consists of obscure processes of metabolism occurring at the periphery. They make possible absorption of sclerosing substances and their decomposition. One of the patients died suddenly on the third day of treatment; she had the severest type of scleroderma with sclerosis of the entire skin and with stiffening of most of the joints. Death may have resulted from hyperthermia.

OPHTHALMOLOGY

A New Trachoma Concept. R. Ching. A. M. A. Arch. Ophth. 51:750-761 (June) 1954 [Chicago].

Ching's new concept of trachoma is based on years of personal observation in endemic areas in China, where trachoma constitutes about 50% of all eye disorders seen in the free clinics. He differentiates between simple and infected trachoma. Simple trachoma is a mild, insidious disease, frequently self-limiting, not especially infectious, and comparatively harmless. Pathologically, simple trachoma is a hyperplasia of the lymphatics of the conjunctival epithelium. It is not an inflammation, not a conjunctivitis, and there is no acute phase. The primary lesion is a follicle, located in the upper retrotarsal fold and the epithelium of the upper cornea. Scarring and vascularization are reactions following this follicle. The cause is believed to be a filtrable virus. The trachoma virus incites only a mild reaction in the host tissue. An equilibrium becomes established between the normal conjunctiva, the trachoma follicle, and its products, but owing to various factors, this equilibrium shifts, and this shifting is characteristic of trachoma. The invasion of secondary organisms will cause a disturbance in the equilibrium and produce infected trachoma. This infected trachoma is the trachoma described in textbooks and observed mostly in the clinics. The author feels that MacCallan's four stage classification, which is based on the amount of inflammation and cicatrization, is not sufficiently descriptive. The clinical criteria of trachoma diagnosis are the triad signs, follicle, pannus, and cicatrices. Infected trachoma may pass through the following stages: deep conjunctivitis, thick scarring, entropion, keratitis, ulceration, and subsequent blindness. The author proposes a uniform method of recording trachoma with the aid of a special trachoma sheet. He feels that in the light of a new trachoma concept, the regulations governing international trachoma quarantine measures should be modified. The diagnosis of simple trachoma need not be a reason to detain any traveler. With modern chemotherapy infected trachoma can be arrested in a relatively short time. This fact should be given due consideration in connection with the length and and method of quarantine.

Role of Adrenal Cortex and Vitamin B_{12} in Diabetic Retinopathy. B. Becker, R. Allen, F. C. Winter and others. Am. J. Ophth. 38:53-59 (July) [Part II] 1954 [Chicago].

Becker and associates review clinical, necroptic, and experimental evidence for implicating excessive adrenocortical function and vitamin B_{12} deficiency in the pathogenesis of diabetic retinopathy and the Kimmelstiel-Wilson lesion. The greatly increased incidence of cortisone-induced renal lesions in the rabbit on a diet not supplemented with vitamin B_{12} suggests that the explanation for the observed potentiation of this lesion by alloxan diabetes may be related to an associated B_{12} deficiency. The findings also provide additional evidence for the interpretation suggested for the vitamin B_{12} test-dose excretion of diabetics and, in particular, lend weight to the supposition of a marked vitamin B_{12} deficiency in the diabetic with retinopathy. At any rate, it would appear that a vitamin B_{12} deficiency as well as increased adrenocortical activity are involved in the pathogenesis of diabetic retinopathy and the Kimmelstiel-Wilson lesion. It is possible that both diabetes and adrenocortical hormones act through a vitamin B_{12} depletion mechanism. The lesions might then be due primarily to deficiency of vitamin B_{12} and/or an inability to metabolize or methylate some steroids in the absence of vitamin B_{12}. In rats, vitamin B_{12} has been shown to counteract almost completely such cortisone effects as thymus atrophy, alopecia, and inhibition of body growth.

Deficiency of vitamin B_{12} does not, however, appear to be the sole defect in the pathogenesis of diabetic retinopathy and Kimmelstiel-Wilson lesions. Thus, vitamin B_{12} failed to prevent the cortisone-induced renal lesion in all of the rabbits; one-third of the animals exhibited lesions in spite of massive doses of vitamin B_{12}. Furthermore, severe deficiencies of vitamin B_{12} in rats do not produce renal lesions resembling those described by Kimmelstiel and Wilson. It should be noted also that the vitamin B_{12} deficiency present in patients with pernicious anemia is not usually associated with Kimmelstiel-Wilson lesions or diabetic retinopathy. Finally, intensive vitamin B_{12} therapy failed to alter significantly the clinical course of patients with diabetic retinopathy. There is ample evidence, therefore, that the retinal and renal lesions of the diabetic cannot be attributed wholly to a vitamin B_{12} deficiency. It would seem more likely that adrenocortical hormones, diabetes, and vitamin B_{12} deficiency act together in producing the lesions by means of their effects on some other deficiency or metabolic disorder.

Studies on the Nature of the Exophthalmos-Producing Principle in Pituitary Extracts. G. K. Smelser and V. Ozanics. Am. J. Ophth. 38:107-122 (July) [Part II] 1954 [Chicago].

Experiments that aimed at clarifying the relation of anterior pituitary factors to experimentally produced exophthalmos in guinea pigs are described. These experiments indicate that the power of pituitary extracts to produce exophthalmos is not necessarily proportional to their ability to induce thyroid hypertrophy in chicks, that is, to their thyrotropic hormone content. However, the exophthalmos-producing factor is obviously much more closely associated with thyrotropic hormone than with any other single principle, for example, follicle-stimulating hormone, corticotropin, gonadotrophin, prolactin, or the growth hormone. Administration of each of these separately failed to produce exophthalmos, even when they were given in quantities 4 to 16 times that contained in the cruder extracts, which did produce a proptosis. The preparations tested were not physiologically pure and presumably any of them could have contained, as a contaminant, a separate exophthalmos-producing material. Such a hypothetical factor, however, was not present in any of these extracts in amounts adequate to produce exophthalmos. It would seem, therefore, that such a factor, if not the thyroid-stimulating hormone, is very similar to it, for it was present in each of several thyrotropic preparations (beef and pig pituitary extract, and the thyrotropins of Armour and Organon) that were used. In these cases the exophthalmos-producing potency was directly proportional to the thyrotropic hormone content. If similarity or close association are accepted, identity of the thyrotropic and exophthalmos factors appears to be denied by the experiments with sheep and horse pituitary extracts. The result of the experiments with pituitary hormone combinations also does not support the idea that the thyrotropic hormone is exclusively responsible for exophthalmos. The administration of corticotropin in conjunction with a small quantity of pituitary extract causes a marked exophthalmos, whereas when injected separately in the same quantity neither causes this effect. Exophthalmos, therefore, appears to result from the synergistic action of two or more substances.

The Probable Systemic Nature of Mikulicz's Disease and Its Relation to Sjögren's Syndrome. W. S. Morgan. New England J. Med. 251:5-10 (July 1) 1954 [Boston].

In a comparative histological study of 18 previously reported cases of so-called Mikulicz's disease and the microscopical material from the original series of Sjögren's syndrome, the pathological changes in the salivary glands were found to be identical. A reexamination of the clinical records of the 18 patients disclosed that a significant number had other components of Sjögren's syndrome such as keratoconjunctivitis sicca, xerostomia, and rheumatoid arthritis. Conversely, a study of cases classified as Sjögren's syndrome revealed that the incidence of the several components of Sjögren's syndrome was extremely variable, and, in addition, many of the patients had chronic enlargement of the salivary glands, one of the prominent features of Mikulicz's disease. The condition characterized by chronic enlargement of the salivary or lacrimal glands, which in the past has been called Mikulicz's disease, may be a less highly developed variant of a larger symptom complex, Sjögren's syndrome. Because of the high incidence of rheumatoid arthritis in Sjögren's syndrome it is possible that the pathological process in the salivary or lacrimal glands is similar and of systemic origin.

THERAPEUTICS

Pamine Bromide: Gastric Antisecretory Effects and Therapeutic Usefulness in Peptic Ulcer and Other Gastrointestinal Disorders. J. B. Kirsner, E. Levin and W. L. Palmer. Gastroenterology 26:852-867 (June) 1954 [Baltimore].

The effect of single doses of methscopolamine (Pamine) bromide on basal gastric secretion was determined in experiments performed on 110 persons secreting acid gastric juice continuously; almost all of them were patients with duodenal ulcer. Forty-seven patients were given methscopolamine in single doses of 0.014 to 1.4 mg. intramuscularly, and in 25 of the 47 patients anacidity was produced. Side-effects occurred with amounts of 0.039 mg. and increased in proportion to the dosage. Fifty-seven patients received single doses of 2.5 to 25 mg. of the drug intragastrically, and 6 patients received 10 to 20 mg. of methscopolamine intraduodenally; anacidity was produced in 22 of the 57 patients and in 2 of the 6 patients. Side-effects were pronounced with doses of 15 mg. or more. Methscopolamine in laminated tablets containing 5 or 10 mg. of the drug suppressed gastric secretion temporarily in 3 of 10 patients. Single intramuscular injections of methscopolamine in doses of 0.13 to 0.23 mg. decreased briefly the continuously stimulated gastric secretion in six of eight patients in whom maximal secretion of hydrochloric acid was induced and maintained by the subcutaneous injection of 12.5 mg. of the histamine analog, 3-beta aminoethylpyrazole, every 15 minutes. The fasting secretion for one hour, measured at intervals during the prolonged oral intake of methscopolamine, decreased in 13 of 15 patients. The clinical response to methscopolamine was studied in 88 patients with peptic ulcer and in 37 patients with other gastrointestinal disorders. The drug was given in 5 mg. tablets, usually two to four times daily for 2 to 11 months. Good or favorable results were obtained in 74 of the 88 patients with peptic ulcer; in the remaining 6 the therapy was considered insufficient. Side-effects occurred in 63 of the 88 patients and necessitated discontinuation of the drug in 17. The most frequent symptoms were dryness of the mouth, blurring of vision, and constipation. The side-effects decreased or apparently subsided completely during prolonged therapy in 25 patients. Of the 37 patients with gastrointestinal disease other than peptic ulcer, 16 had functional gastrointestinal disorders, and in 11 of these, decrease in diarrhea and relief of abdominal pain was observed. Similar improvement resulted in 7 of 10 patients with regional enteritis and in 4 of 7 patients with severe ulcerative colitis. Symptomatic improvement was noted also in two patients with hiatus hernia and heartburn and in one patient with the postgastrectomy syndrome. Methscopolamine was ineffective in one patient with chronic recurrent pancreatitis. Side-effects occurred in 25 of the 37 patients, and their severity necessitated discontinuation of the drug in 11. The prolonged oral intake of methscopolamine did not produce demonstrable toxic effects on the blood, urine, hepatic function, or the electrocardiogram. These results showed that methscopolamine may inhibit completely the continuous basal gastric secretion for several hours or longer. The gastric antisecretory effect of methscopolamine varies among individual patients; the drug may decrease gastric secretion when given either intramuscularly or orally, but much larger doses are required orally. The oral intake of methscopolamine for long periods may induce sustained lowering of the basal secretion and in occasional patients, it sustained anacidity. Side-effects develop to a variable degree in most patients and constitute the chief disadvantage; however, the symptoms may subside with continued administration of the drug, and their incidence and severity can be reduced by individual adjustment of the dosage.

Like other anticholinergic drugs, methscopolamine does not cure peptic ulcer, but it may be a useful adjunct in its treatment. Methscopolamine, by decreasing gastrointestinal motility, may be a helpful adjunct in the management of certain gastrointestinal disorders accompanied by diarrhea.

Bovine Antihaemophilic Globulin in the Treatment of Haemophilia. R. G. Macfarlane, R. Biggs and E. Bidwell. Lancet 1:1316-1319 (June 26) 1954 [London, England].

The effective treatment of hemophilia by replacement of the deficient factor requires large amounts of blood not easily obtainable from human sources. A preparation of bovine antihemophilic globulin was produced of which 1 gm. has an activity equivalent to about 20 pints (9.6 liters) of normal human blood, assayed by the thromboplastin-generation test. Thirty mice that were given an intraperitoneal injection of about 100 times the human dose in proportion to body weight survived without obvious ill effects. One rabbit receiving 1 gm. of the preparation by intravenous injection in three doses in six weeks did not show any ill effects. The clinical action of the preparation was studied in three hemophilic volunteers. Intravenous injections of 0.5 gm. of bovine antihemophilic globulin given to these patients resulted in the expected rise in the antihemophilic activity of their blood. In two of the patients so treated, dental extraction produced no abnormal bleeding. In the third patient, the removal of 16 teeth caused bleeding for several hours but did not necessitate transfusion. No undesirable side-effects were observed in the first two patients. In the third patient, six injections with a total dose of 2.5 gm. of the preparation produced thrombocytopenia but no purpura. The bovine antihemolytic globulin agglutinated human platelets, and attempts will be made to eliminate or reduce this action before proceeding with further trials in man. In each of the three patients tests for the presence of antibodies were made at three and six weeks after the dental extractions. The bovine material showed slight antigenic properties, which may be reduced as purification methods will improve.

Quinacrine (Atabrine) in Treatment of Systemic and Discoid Lupus Erythematosus. E. L. Dubois. A. M. A. Arch. Int. Med. 94:131-141 (July) 1954 [Chicago].

Quinacrine (Atabrine) hydrochloride was given orally to 20 patients with systemic lupus erythematosus and to 2 patients with the discoid form. The initial dose of the drug varied from 1 mg. per day, in a patient who was known to be sensitive to the drug, to a maximum initial dose of 600 mg. per day. An attempt was made to gradually increase the dosage to the point of clinical improvement or maximum tolerance. Doses as large as 2,000 mg. per day for 60 days were used. If nausea or vomiting appeared, the dose was temporarily decreased; however, if psychosis or dermatitis appeared the drug was discontinued. The patients were classified in four groups, according to the severity of the disease. Complete healing occurred in two patients with the discoid form of the disease with lesions limited mainly to the face and without clinical or laboratory evidence of dissemination. The second group consisted of four patients with chronic systemic lupus erythematosus who had discoid lesions on the face and, usually, on the body as well, with occasional flare-ups of systemic involvement, such as arthralgia, fever, and abnormal liver function tests, but negative lupus erythematosus tests; there was healing of the skin lesions as well as disappearance of the systemic symptoms in these four patients. Of the five patients with subacute systemic lupus, a slightly more virulent form with remissions and exacerbations in which L. E. cells are usually found, three were greatly improved. The last group was that of 11 patients with classic acute systemic lupus erythematosus, who had the typical fulminating clinical syndrome, without remissions after a year or more of treatment with cortisone; only 3 of the 11 patients showed improvement, despite vigorous treatment. In general, the less active the disease was, the more rapid and better was the resultant improvement. Only one serious toxic reaction occurred in a patient who became markedly psychotic after 42 days of treatment with quinacrine in doses as high as 900 mg. per day; the psychosis subsided after one week's hospitalization. Dermatitis developed in three patients but disappeared when the drug was discontinued. Of 20 additional patients treated with quinacrine since the author wrote this paper, 3 with discoid lupus, 4 with chronic disseminated lupus, and 6 with the subacute systemic form obtained good to excellent results. Of the remaining seven patients with the acute disseminated form, only three were greatly benefited. In view of the cumulative property of quinacrine and the fact that clinical improvement tends to follow the production of a maximum blood level, it is suggested that quinacrine be started at a level of 300 mg. per day for the first week and that the dose be reduced in a discoid patient or that, in patients with the more virulent form of the disease, the dosage be raised gradually to the point of improvement or toxicity. It is not necessary to produce a yellow stain in order to obtain clinical improvement. Quinacrine is of definite benefit in the treatment of discoid, chronic systemic, and subacute systemic lupus and is well worth a trial in all patients with these forms of the disease.

Problem of Requirement of "Fractionated Disinfection" in Hospital Treatment of Scarlet Fever with Penicillin. R. Fischer and I. Faust. Deutsche med. Wchnschr. 79:1076-1078 (July 2) 1954 (In German) [Stuttgart, Germany].

"Fractionated disinfection," which was at first considered indispensable to the success of penicillin therapy, consists of bathing the patient after the first febrile days of scarlet fever, followed by moving him to another room, where he stays until the pharyngeal smears have become negative for hemolytic streptococci. The patient then is given another bath and is moved to a third room, from which he is discharged after thorough final disinfection. At the medical department of the city hospital in Kassel, Germany, limited accommodations made such a "fractionated disinfection" impossible, but penicillin therapy nevertheless was instituted because of a large influx of patients of both sexes and all ages with scarlet fever. Depot penicillin in doses of 300,000 to 400,000 units, depending on the patient's age, was given daily for 10 days to 59 patients without isolating the recent patients from those who had already been treated for some time. As a rule the patients were discharged from the hospital immediately after the termination of the 10 day treatment. Complications were not observed. A questionnaire sent out to 58 patients or their parents six weeks to eight months after the patient's discharge was answered by all. Except for two cases of myocarditis, other typical complications or sequelae of scarlet fever were not observed. In two additional cases a secondary infection in a sibling of the patient after the latter's return from the hospital could not be definitely excluded. The authors recommend treatment with penicillin without "fractionated disinfection," particularly in hospitals with limited space in the department for infectious diseases.

The New Antibiotic Xanthocillin. W. Rothe. Deutsche med. Wchnschr. 79:1080-1081 (July 2) 1954 (In German) [Stuttgart, Germany].

At the university of Jena in 1948, a new antibiotic in the form of yellow crystals was isolated from the mycelium of a special strain of Penicillium notatum. Because of its color and origin it was given the name of xanthocillin. It possesses the formula $C_{18}H_{11}O_2N_2$, corresponding to a molecular weight of 290. Despite a standard crystallized form, it may be separated by chromatography into two components, X and Y, which are chemically similar and both of which are of high therapeutic value. The xanthocillin preparation contains the antibiotic in pure crystalline form with the two components X and Y in a ratio of about four to one. The spectrum of the antibacterial effect of the new antibiotic is unusually wide. It prevents in high dilutions the growth of micrococci, streptococci, and Corynebacterium diphtheriae and other gram-positive bacteria, and in addition also that of gram-negative bacteria resistant to penicillin, such as colibacilli, Proteus organisms, Pseudomonas aeruginosa, and anaerobic spore-forming agents, such as Clostridium tetani, Bacillus anthracis, Clostridium perfringens, and Mycobacterium tuberculosis. Xanthocillin also acts as a bactericidal in high dilutions, so that one may speak of a polyvalent-bactericidal effect. Experiments with various bacteria showed that in contrast to other antibiotics and sulfonamide compounds xanthocillin does not produce increasing resistance of the bacteria. Strains that become experimentally resistant to penicillin, sulfonamide compounds, or streptomycin, maintained their original high sensitivity to xanthocillin. The new antibiotic, however, is not suited for general treatment because it is not easily absorbed, and that makes it impossible to achieve an adequate blood or tissue level by parenteral or oral administration. Toxic side-effects are to be expected with high dosage. Therapeutically sufficient concentration may be obtained with relatively low doses for local use. Difficult absorption favors a cumulative effect. Local prophylactic and therapeutic use of 10 to 20 mg. of xanthocillin proved adequate against peritonitis, while even larger amounts of 350 mg. inserted in large infected wound cavities, (e. g. after nephrectomy), did not cause any untoward side-effects. Xanthocillin was applied as a powder, an ointment, a wound-packing material, or a solution. It was successfully applied to the outer layer of the skin, to wounds, to the eyes to the nose, mouth, and pharynx, in the nasal accessory cavities, pleural cavity, peritoneum, and uterus. The significance of xanthocillin for local therapy consists in the fact that it renders unnecessary the local use of antibiotics and sulfonamide compounds that are suitable for general treatment. Spread of strains resistant to penicillin, streptomycin, and sulfonamide compounds can thus be counteracted, and the reliability of these other drugs for general treatment may be insured. The same applies to specific phenomena of allergization that are associated with local therapy of skin and mucous membranes by other drugs. The polyvalent-bactericidal effect of xanthocillin assures therapeutic success even without previous resistance tests, and an increasing resistance of the bacteria in the course of the treatment need not be feared.

Results of In-Flight Testing of SAM Portable Respirator on Poliomyelitic Patients. S. S. Wilks and J. F. Tomashefski. J. Aviation Med. 25:265-274 (June) 1954 [St. Paul].

As the result of an evaluation of commercially available portable respirators, Wilks and Tomashefski concluded that the most dependable and reliable respirator is one encasing the entire body. Since there were no acceptable lightweight, full-body respirator units available, considerable effort was expended toward the development of a lightweight power unit and valving mechanism that would operate a full-body shell. Several models were designed and built before they evolved the one that appeared to be more suitable for the evacuation of poliomyelitis patients than any commercial model they used in the experimental program. The basic principle of the power unit is a high speed, motor-driven impeller with a cam-operated valve system that alternately connects the tank opening to the intake and discharge compartments of the impeller box. Two types of power units have been developed for the portable respirator. It has been tested in controlling the respiration of dogs anesthetized with morphine and pentobarbital (Nembutal), in normal subjects, and in poliomyelitis patients. Whether poliomyelitis patients should be transported by air and in what stage of the disease process this transportation should be performed is controversial. Recently the Navy condemned transportation by air of patients in the acute stage of poliomyelitis unless lifesaving methods and measures were not available locally and could not be transported to the patient. Nevertheless, civilian as well as military institutions make every effort to transfer a patient with poliomyelitis as quickly as possible to an institution where trained personnel and adequate equipment are available. Many of the patients transported during the past 24 months were acutely ill. No immediate ill effects have been observed in these patients; they all tolerated the flights well and no in-flight emergency measures except occasional aspiration and administration of oxygen by inhalators were necessary. The number of requests for moving such patients is becoming greater. The use of a lightweight portable respirator will eliminate many of the difficulties encountered in attempting transport with a standard full-body "iron lung." The described respirator will provide adequate ventilation and maximum comfort for acute or chronically apneic patients. It may also be used as an emergency hospital or medical station unit.

PATHOLOGY

The Incidence of Ulcer-Cancer. A. D. Morgan and E. S. Lee. Brit. J. Surg. 41:595-598 (May) 1954 [Bristol, England].

Ulcer-cancer is a definite entity and occurs in at least 1% of chronic gastric ulcers. As it can be diagnosed only in the very early stages of malignancy, its incidence is certainly higher, though an accurate figure cannot be determined. Two new cases are described, the only proved ulcer-cancers among 104 carcinomas diagnosed in a series of 673 postgastrectomy specimens. Two other specimens in the group of 104 carcinomas were strongly suggestive of ulcer-cancer. The microscopical criteria for the diagnosis of ulcer-cancer are: (1) the floor of the ulcer should be that of a typical chronic peptic ulcer, composed of dense fibrous tissue in which neither muscle fibers nor tumor cells are found, and (2) the muscle should end abruptly near the wall, and between it and the overhanging mucosa should be a focus of unmistakable carcinoma, with evidence of invasion of muscle. The finding of undoubted cancer in one margin of an otherwise typical chronic ulcer is regarded as evidence of a causal connection. The presence of muscle fibers or tumor cells in the base of the ulcer invalidates the diagnosis.

Encapsulated Angioinvasive Carcinoma (Angioinvasive Adenoma) of Thyroid Gland. J. B. Hazard and R. Kenyon. Am. J. Clin. Path. 24:755-766 (July) 1954 [Chicago].

Hazard and Kenyon describe the pathological and clinicopathological aspects of 32 cases of encapsulated angioinvasive carcinoma. The 32 neoplasms were found in a review of 2,500 encapsulated tumors of all types, an incidence of 1.3%. These were encountered in approximately 22,000 thyroid operations at the Cleveland Clinic between the years 1923 and 1952, inclusive, and comprised 8% of the carcinomas. The majority of these malignant encapsulated tumors were atypical as compared with the usual adenoma. Mitoses were commonly found and were of greater frequency than in other encapsulated nonpapillary thyroid tumors. The malignancy of the neoplasm is emphasized by the fact that 4 (18%) of 22 patients died as a result of the carcinoma; 15 (68.2%) developed metastases or local recurrences. In the majority, such malignant manifestations appeared within five years. Angioinvasion in an encapsulated nonpapillary tumor of the thyroid gland is an important indication of malignancy. The term encapsulated carcinoma is proposed as a designation of this group of nonpapillary tumors. There was no indication that any clinical feature showed correlation with prognosis. Unusually numerous mitoses were encountered with greater frequency in those tumors that subsequently had a malignant course. The degree of vascular invasion did not appear to be a factor in determining prognosis.

Relationships Between Parathyroids and Bone Diseases. H. A. Salvesen. Minerva med. 45:1473-1476 (May 23) 1954 (In Italian) [Turin, Italy].

The mechanism of bone formation is not entirely understood, but probably the parathyroid influences the process by maintaining an adequate concentration of calcium and phosphorus in the blood. A functional insufficiency of these glands leads to uncontrolled osteogenesis with calcification of the cartilages and ligaments in addition to increased density of the bones already formed. A normal functioning of these glands insures the best bone formation. The calcium-regulating action of these glands is demonstrated by the fact that if the blood calcium diminishes for causes other than a condition of the parathyroids, these draw calcium from the bones to protect the organism against the dangerous consequences of hypocalcemia. When calcium decreases and tetany appears, the parathyroids become hyperactive (secondary hyperparathyroidism) and eventually become hyperplastic; it is, therefore, always necessary to determine first whether a case of hypocalcemia is the result of idiopathic hypoparathyroidism, in which case there would be no functional reaction of these glands. The difference between primary and secondary hyperparathyroidism lies in the fact that in the former more parathyroid hormone is produced than is necessary, whereas in the latter the increased production of the hormone aims at compensating calcium losses. Secondary hyperparathyroidism is, therefore, a physiological process that serves to protect the organism from a hypocalcemia induced by causes other than parathyroid insufficiency. But it does, at the same time, impair the bones. If the hypocalcemia lasts long, the bones undergo a marked loss of calcium, because of the action of the parathyroids, especially in cases in which calcium absorption is deficient. Diseases in which secondary hyperparathyroidism may determine bone lesions are rickets, osteitis fibrosa generalisata (Recklinghausen's disease), chronic renal insufficiency, and Fanconi's syndrome.

Sputum Smears as Source of Infectious Aerosol. F. Dekking. Nederl. tijdschr. geneesk. 98:1626-1630 (June 12) 1954 (In Dutch) [*Amsterdam, Netherlands*].

Dekking discusses causes and cites figures on laboratory infections with various types of organisms. Ignorant, careless, and indifferent laboratory workers are chiefly responsible for laboratory infections, and preventive measures should not overlook this fact. A number of investigators, chiefly Americans, have described preventive measures. Dekking states that it can be shown by means of electronic flash photographs that the common technique of making sputum smears between two object slides may be the source of an infectious aerosol. The method should be discarded.

Carcinoma (Cylindromatous Type) of Trachea and Bronchi and Bronchial Adenoma: A Comparative Study. H. T. Enterline and H. W. Schoenberg. Cancer 7:663-670 (July) 1954 [*Philadelphia*].

The cylindromatous type of carcinoma is a distinctive tumor that probably arises from ducts of salivary or mucous glands and occurs in salivary glands, paranasal sinuses, palate, larynx, trachea, and bronchi. Two new cases of it in the bronchi are reported. A series of 156 cases, 94 bronchial adenomas and 62 cylindromas, was composed of 12 personal cases and 144 from the literature. In this series, bronchial adenomas did not occur in the trachea and carina. The carcinoma (cylindromatous type) is infiltrative, grows slowly, and ultimately metastasizes in a considerable percentage of cases. No case is mentioned in the literature as occurring in a Negro, and none of the authors' cases of either tumor was in a Negro. In the cases reviewed, the cylindroma ultimately killed the patients seven times as frequently as did the bronchial adenoma (30 and 4.4%), and the cylindroma also recurred seven times as frequently as the "carcinoid" type of adenoma (20 and 2.9%). The bronchial adenoma differs in structure, location, and behavior from carcinoma of the cylindromatous type, and the two tumors should not be placed in the same category.

Histopathological Alterations of Adrenal and Anterior Pituitary Glands in Patients Treated with Cortisone. W. A. Bennett. J. Bone & Joint Surg. 36A:867-874 (July) 1954 [Boston].

Study of the adrenal glands from 190 patients who had been given cortisone for various conditions, including acute leukemia, periarteritis nodosa, disseminated lupus erythematosus, and rheumatoid arthritis, showed morphological changes of such intensity as to explain the acute postoperative adrenal insufficiency sometimes noted in patients so treated. The administration of cortisone may lead to significant suppression of adrenal cortical function. Withdrawal of the exogenous hormone, however, will be followed after a variable period of weeks or even months by the reestablishment of normal function. Any added stress, such as that occasioned by surgical intervention, during the period preceding the resumption of normal function may precipitate the appearance of acute adrenal insufficiency. An essential similarity of adrenal cortical response was noted in all the adrenal glands studied, regardless of the condition for which hormone therapy had been given. Definite evidences of adrenal atrophy were found in those cases in which cortisone had been administered for more than five days and in a total dose of more than 450 mg. This atrophy was characterized by a decrease in the weight of the gland as compared to the normal weight, a narrowing of the cortex with loss of yellow color, and a rather constant loss of lipid not accompanied by cellular destruction. Cortisone-induced adrenal atrophy is a reversible state, but neither the dosage and duration of administration required to produce it nor the length of time necessary for recovery can be accurately determined. Changes that seem to parallel the atrophy and loss of lipid content produced in the adrenal cortex by cortisone can also be demonstrated in the pituitary glands of patients who have been treated with cortisone or corticotropin or both. These changes, consisting chiefly of degranulization, hyalinization, and vacuolization of the basophils, resemble those described by Crooke in adrenal cortical hyperfunction (Cushing's syndrome) and, like the changes in the adrenal cortex, they seem to be reversible. Evidence now available strongly suggests that the atrophy, loss of lipid, and impairment of the function of the adrenal cortex induced by cortisone result from suppression of pituitary adrenotropic function rather than from direct action by cortisone on the adrenal cortex. Both cortisone and corticotropin are capable of producing similar histological changes in the pituitary gland and both are presumably capable of suppressing its adrenotropic function. Acute adrenal insufficiency may, therefore, appear in patients subjected to surgical stress during the period between the withdrawal of either cortisone or corticotropin and the resumption of normal pituitary and adrenal function.

Morphological and Quantitative Comparison Between Infectious and Non-Infectious Forms of Influenza Virus. G. H. Werner and R. W. Schlesinger. J. Exper Med. 100:203-216 (Aug.) 1954 [New York, N. Y.].

Electron microscopic study has revealed the morphological entity responsible for the rise in viral hemagglutinin observed in brains of mice after intracerebral inoculation of non-neurotropic strains of influenza virus. This rise in hemagglutinin, although dependent on inoculation of fully infectious virus, is not associated with an increase in infectious titer. The hemagglutinating principle is functionally similar to the "incomplete" influenza virus that can be obtained from chick embryos by serial egg-to-egg transfer of undiluted, infected allantoic fluid according to the method of von Magnus. A method that facilitates selective adsorption of viral particles was used in studying the morphology of noninfectious, hemagglutinating virus from chorioallantoic membranes or mouse brains and in comparing these two forms with each other and with ordinary, infectious (standard) influenza virus. Standard virus isolated from allantoic fluids or membranes of infected eggs was found to contain uniform particles of predominantly spherical shape with smooth surface and even density. In contrast, noninfectious, hemagglutinating virus obtained either from allantoic sacs ("undiluted passages") or from mouse brain was pleomorphic and seemed to consist of distintegrating particles. The majority appeared flattened and bag-like and had a rough, granular surface and reduced, uneven density. Thirty-seven per cent of the noninfectious particles isolated from mouse brain infected with the non-neurotropic strain WS had diameters in excess of 170 μ as compared with only 2% of the particles of the parent strain itself. Regardless of whether or not the contrast in appearance of standard and of noninfectious particles was due to differing resistance to the preparatory treatment, it indicated the existence of basic structural differences between the two types of virus. Correlation of particle counts with hemagglutinin titers show that the noninfectious virus obtained from mouse brain is, unit for unit, an equivalent counterpart of standard virus derived from infected eggs. The quantitative data based on particle counts support the assumption that noninfectious virus arises in mouse brain as a product of viral multiplication.

RADIOLOGY

Fissures in Biliary Calculi: Further Observations. C. L. Hinkel. Am. J. Roentgenol. 71:979-987 (June) 1954 [Springfield, Ill.].

Hinkel studied the gallstones of 100 consecutive patients undergoing cholecystectomy, but excluded from study solitary calculi, those less than 3 mm. in diameter, and ductal calculi. Fissures were present in the fresh calculi of 48 of the 100 patients; but when the calculi were dried 57 patients were found to have fissured calculi. Most of the fissures contained fluid in the fresh state, but gas was seen in some. Whether the contents are fluid or gaseous is probably dependent on the size of the central void, the extent of the dendritic fissures and the porosity of the calculus and its shell. When fissured calculi were dried in air there was loss of fluid from the fissures, shrinkage of the central substance, widening of the fissures, and occasionally spontaneous fragmentation. Storage of calculi in physiological saline and 10% formaldehyde solution (Formalin) for one to two and one-half years exerted no appreciable effect on the incidence, character, or degree of fissuring. Ninety-five per cent alcohol caused dissolution of some calculi; in others, it decreased or obscured fissuring as a result of its solvent action. Fissuring occurred most commonly in brown, radially constructed, nonopaque calculi and in those having a dense central nidus. It was uncommon in calculi that were dense throughout or that were lacking in radial structure. It was not found in pure cholesterol or pure pigment calculi. Fissuring is believed to be a phenomenon resulting from internal shrinkage of the colloid-crystalloid mass of the concretion. It is probably a manifestation of aging and is influenced by composition, crystal arrangement, and porosity.

Distant Metastasis from Oral Malignancy. S. G. Castigliano and C. J. Rominger. Am. J. Roentgenol. 71:997-1006 (June) 1954 [Springfield, Ill.].

Death in patients with carcinoma of the oral cavity usually results from the direct or indirect effects of the local lesion or the regional metastasis and not from remote or visceral metastasis. With the increasing ability to control the local lesion, together with its cervical metastases, there has been an increase in the life span in treated fatal cases. Coincident with an increased survival time in these patients, distant metastasis is being observed with greater frequency. The authors found that, in their experience, the organs most frequently involved with distant metastasis from oral carcinoma are the lungs and bones. Malignant lesions situated posterior to the anterior pillar of the tonsil are more prone to produce distant metastasis than malignant lesions that originate in the oral cavity. A case of epidermoid carcinoma, squamous cell type, grade 2, involving the buccal surface is presented to demonstrate distant metastasis from oral malignant lesions. Numerous organs of the body, including the heart, were involved with metastatic foci. Despite the recently noted increase in the incidence of visceral metastasis associated with oral malignant lesions, distant metastasis is still far from being the menace it is in other forms of cancer —for example, cancer of the breast with its high rate of metastasis to bone and lung, or cancer of the rectum and cancer of the stomach with their high rates of metastasis to the liver. Nonetheless, survey roentgenograms of the lungs and bones should be routine prior to contemplated radical surgery for advanced primary and secondary disease. Generally speaking the problem of cure in oral malignant lesions is control of the local disease and its regional metastatic spread.

Hodgkin's Disease. F. W. O'Brien and F. W. O'Brien Jr. Am. J. Roentgenol. 71:1007-1016 (June) 1954 [Springfield, Ill.].

The cause of Hodgkin's disease still remains an enigma, and its diagnosis is questionable, unless it is based on histopathological evidence. Certain regions are anatomically susceptible to extension of this disease; thus, the neck, axilla, and mediastinum may be considered a unit; while the groin, abdominal, and retroperitoneal areas constitute another unit. The spleen is involved in 75% of cases. Stomach and small intestine are frequently the site of Hodgkin's disease. Reports on the incidence of osseous involvement vary widely. Lesions may occur within the kidneys, adrenals, retroperitoneal, and mesenteric systems. Direct involvement of the central nervous system is rare. The form of Hodgkin's disease that is frequently overlooked concerns the patient who has lost weight, has no appetite, is pale, febrile or afebrile, and complains of pruritus. There are no grossly palpable lymph nodes; yet, roentgen studies may reveal pulmonary, intra-abdominal or osseous disease. This form has often been labeled atypical. Until recent years arsenic, surgery, and irradiation, singly or in combination, have been the treatments of choice in Hodgkin's disease. Surgery would only seem indicated when the disease is localized, and such patients are the exception. Since 1940 the authors have observed 170 patients with Hodgkin's disease who were referred for radiation therapy. On the basis of their own experiences and those of others they believe that the mustards and triethylene melamine may be useful adjuvants in the treatment of generalized Hodgkin's and so-called radiation-fast disease. They do not deny that chemotherapy may have opened up an important approach to the treatment of the lymphoma group. However, they deprecate the routine application of the mustards by internists and hematologists without regard to the natural history of the disease and the known benefit of irradiation. A close collaboration between internist, surgeon, and radiation therapist is essential. Until further evidence is presented, they feel that irradiation remains the cornerstone of therapeusis in Hodgkin's disease.

Batch Processing of Film for Radiation Protection of Personnel. R. J. Magill. A. M. A. Arch. Indust. Hyg. 10:37-42 (July) 1954 [Chicago].

Film badge dosimetry is a convenient method for measuring personal exposure to x-rays and gamma radiation. Its use has been extended to monitor other radiation, such as neutrons, both slow and fast. The accuracy of film dosimetry is highly dependent on controlled conditions of development. Equipment designed for dental roentgenographic work is usually employed for the development of the film badge, because the film sizes are the same. This equipment functions smoothly for dental work, but a system designed for quick inspection during processing and for a steady work load seems to impose an unnecessary burden on the inherent accuracy of processing. Two other systems seemingly are more desirable for densitometric accuracy. In one method all films for an exposure period are processed at once in a compact, light-tight tank, with holders firmly supporting the film. The second is a continuous system, such as that used for motion-picture film; in this case the pieces of film are carried on a belt. Owing to relative cost and the set-up and clean-up time required for the continuous system, it would not seem feasible to use this method for less than 1,000 films per exposure period. Various factors influencing development are considered in relation to the three systems of processing. "Batch" denotes the small-tank process in which all films are developed in one load; "group," the dental operation in which part of the film is given batch processing; "continuous," denotes the process in which the pieces of film are carried on a continuous belt. The author shows that batch processing equipment represents the minimum investment and leads to the shortest working time for a work load between 10 and 1,000 films per exposure period. The steps in processing are briefly described. In the concluding summary the author emphasizes that batch processing of dosimetry film yields greater accuracy with less expensive equipment than do conventional methods. Conditions of development are more closely controlled because fresh solutions are used for short periods of time and because agitation is performed at the optimum rate. Standard exposures processed with the unknowns make it possible to correct a standard calibration curve for the usual small differences in development and in film speed. The use of a light-tight tank with a light trap for pouring solution in and out makes more than a dark closet with 3 ft. of bench space and a safe light unnecessary. Even though more elaborate equipment, with a pump for agitation and fluid handling, is used for operations involving 400 films or more, this same darkroom space is adequate. By evaluating film with an optical wedge comparator instead of a densitometer and processing with this simple batch equipment, it is possible to handle as few as 25 films per exposure period at a cost per film comparing favorably with present systems involving several hundred films.

Radio-Active Iodine and Protein-Bound Iodine in Thyroid Disorders. J. P. Madigan and W. E. King. M. J. Australia **1:**801-814 (May 29) 1954 [Sydney, Australia].

A group including physicians, radiotherapists, physicists, a pathologist, and a biochemist undertook to investigate the following: (1) the value of physical indices concerning uptake and excretion of tracer doses of radioactive iodine (I^{131}) as an indication of thyroid function; (2) the value of protein-bound iodine as an index of thyroid function; (3) comparison of the value of physical indices, protein-bound iodine, and basal metabolic rate estimations in the same group of patients compared to clinical assessment; (4) comparison of various physical indices to determine the most useful; (5) clinical trial of I^{131} as a therapeutic agent in hyperthyroidism and carcinoma of the thyroid; (6) investigation of superior mediastinal "tumors" with tracer doses of I^{131} to detect thyroid tissue if present; and (7) establishment of a method of radioautography. This extensive paper and two others, to be published later, report the results of the joint project carried out at the Royal Melbourne Hospital. The first part of this paper is concerned with the clinical assessment of 140 tracer tests carried out on 114 patients: 72 of these tests were made on 66 subjects with normal thyroid function, 65 on 45 patients with thyrotoxic hyperthyroid function, and 3 tests on 3 patients with hypothyroid function (myxedema). Clinical assessment gave correct classification for 128 of 140 tracer tests. Physical indices gave correct classification for 113 of the total 140 performed. Protein-bound iodine estimation gave correct classification for 111 tests of a total 131 performed. The basal metabolic rate gave correct classification for 40 tests and inconclusive or incorrect results for 36 of the total of 76 performed. The analysis of 23 patients with hyperthyroidism who were treated with I^{131} revealed that 3 have since died of cardiac failure existent at the time of I^{131} therapy and of hypertensive or rheumatic causes in addition to a thyrotoxic element. Two of these patients had their thyrotoxicosis controlled by a single dose of I^{131}, and the other died two months after a single dose with only partial control. Twenty patients are still alive. Ten of these had their hyperthyroidism controlled and have been under observation for from six months to three years. Of the remaining 10 patients, 4 improved but were only partly controlled. The period of observation since the last dose has been between two and six months. Five patients have been in a nontoxic state since their last therapy dose was given three to five months ago; insufficient time has elapsed to determine whether their condition will be controlled. Because a superior mediastinal tumor may be a retrosternal thyroid mass, 10 patients with mediastinal masses were studied by tracer tests with radioactive iodine. Notwithstanding certain difficulties, such as the close proximity of the superior mediastinum to the thyroid, there was sufficient discrete uptake in the mediastinal mass in 6 of the 10 patients tested to indicate the thyroid tissue content. This conclusion was later verified at operation in each of these six patients. The therapeutic use of radioactive iodine in malignant lesions of the thyroid was limited. Only 5 of 17 patients with suspected thyroid carcinoma were given therapeutic doses of radioactive iodine, the others being regarded as not suitable for this treatment.

Calcification of the Intervertebral Disks in Childhood. F. N. Silverman. Radiology **62:**801-816 (June) 1954 [Syracuse, N. Y.].

Seven new cases of intervertebral disk calcification in children are reported and compared with eight reports available in the literature. Relationship to clinical complaints is by no means a constant finding, and differentiation of possible syndromes on the basis of persistence or disappearance of calcification in relation to symptoms probably is not warranted. The factors accounting for the appearance, persistence, or disappearance of the calcifications are not known. Intensive treatment in the presence of symptoms referable to the level of calcification is unjustified; it must be remembered that these calcifications often disappear spontaneously. The fact that persistent calcifications have not been recognized in the cervical levels may permit the separation of the group with cervical calcification, neck pain, and transient calcification from the group with persistent calcification or disappearing calcification in other regions. Calcification of the intervertebral disks often goes unnoticed upon casual reading of roentgenograms. More reports of the condition are necessary before any definite conclusions can be made.

Necrosis of Brain and Spinal Cord Following X-Ray Therapy. N. Malamud, E. B. Boldrey, W. K. Welch and E. J. Fadell. J. Neurosurg. **11:**353-362 (July) 1954 [Springfield, Ill.].

Two cases are described that illustrate that roentgen irradiation of the central nervous system may produce necrosis. The first patient, a man aged 22, was given irradiations for a nasopharyngeal carcinoma. External irradiation was directed through three ports, 3,300 r (air) being given to the right, 1,650 r (air) to the left, and 1,650 r (air) to the back of the nasopharynx-cervical region, over a period of 20 days. The calculated tissue dose in the center of the field was approximately 5,000 r. Repeated follow-up examinations during the ensuing year failed to reveal recurrence of tumor. About a year later the patient exhibited symptoms of a progressing neurological disorder, and he died about two months later. The rapid progression in this case corresponded to pathoanatomic findings of an acute necrotizing myelitis associated with fibrinoid degeneration of blood vessels and mild glial response. The more protracted course in case 2, on the other hand, was reflected in a chronic pathological process of cystic degeneration and/or gliosis of grey matter, demyelinization and gliosis of white matter, and sclerosis and hyalinization of blood vessels. In the second patient, a woman aged 37, 20 x-ray treatments had been applied to the right and left temporo-parieto-occipital region. It was calculated that the tissue dose at the midplane of the head at a depth of 7.25 cm. was 3,573 r. In this patient 21 months had elapsed before symptoms of radionecrosis appeared. Reviewing the literature on complications of the central nervous system after x-ray therapy for tumors or other lesions within or outside the cranium the authors found that of the cases confirmed by biopsy or postmortem examination 12 had cerebral necrosis and 3 spinal cord myelitis. The free interval between irradiation and appearance of complications ranged from four months to seven years. The authors feel that in any attempt to explain these complications of x-ray irradiation, besides the factor of individual susceptibility, the question of excessive dosage deserves primary consideration. The tolerance doses calculated by Boden were exceeded in all reported cases of radionecrosis of brain or spinal cord.

Effect of Roentgen Rays on Lepromatous Leprosy. E. F. Lutterbeck, I. F. Hummon, R. R. Wolcott and F. A. Johansen. Radiology **63:**1-10 (July) 1954 [Syracuse, N. Y.].

Lutterbeck and associates report a pilot study of the effects of roentgen radiation on lepromatous lesions in a few selected patients whose treatment was not otherwise changed. Six patients (four males and two females), ranging in age from 16 to 67 years, were treated. A total of 17 nodules, 3 macules, and 3 plaques were treated. All the nodules were small, measuring about 5 by 4 mm. and about 2 to 3 mm. in thickness. The irradiated plaques and macules measured 2.5 cm. in diameter and were slightly elevated. The irradiation was carried out with a contact therapy machine, which operates at 50 kv., 2 ma., and has a tube permitting operation at 18 mm. anode-skin distance. With this apparatus it is possible to deliver 1,000 r in six seconds. Single doses ranging from 1,000 to 6,000 r in air were given, and clinical changes were observed three weeks after the treatment, when the radiation reaction was at its height, and two months, six months, one year, and two years later. Flattening and atrophy of all but two of the treated lesions was observed. A dose of at least 2,000 r was required to produce this result. Only the superficial structures of the skin were influenced; the doses applied did not cause atrophy or regression of lepromatous lesions in the dermis or subcutaneous tissues. No local recurrences were observed in irradiated areas during a two year observation period, but irradiated areas can be invaded by growing adjacent lepromatous lesions. Local radiation effects on skin lesions do not change the general course of leprosy. Histological studies failed to reveal evidence of radiation damage. Repeated skin scrapings of irradiated areas failed to show any decrease in number or change in morphology of Mycobacterium leprae.

BOOK REVIEWS

Geriatric Medicine: Medical Care of Later Maturity. Edited by Edward J. Stieglitz, M.S., M.D., F.A.C.P., Consulting Internist, Suburban Hospital, Bethesda, Md. Third edition. Cloth. $15. *Pp.* 718, with 205 illustrations. *J. B. Lippincott Company*, 227-231 *S. Sixth St., Philadelphia* 5; 2083 *Guy St.*, Montreal, Canada; British agent—Sir Isaac Pitman & Sons, Ltd., *39 Parker St.,* London, W.C.2, England, 1954.

Improvement in scientific method applied to the understanding and control of disease and disorders of the human body has resulted in the control, indeed, in the eradication of many diseases that a quarter of a century ago proved fatal. One of the most significant phenomena of our time is reflected in the numerical proportion of the various age groups of the population; for example, during the past two decades the population of the United States has doubled, but the number of persons over 60 years of age has quadrupled. By sheer numbers alone, then, the problems of older men and women take on new importance. As pediatrics, less than half a century ago, blossomed into a new specialty that paid off richly in terms of infant mortality and normal growth, so geriatrics today looms large as one of the major areas for scientific research and patient care. Dr. Stieglitz with 48 contributors has created a work that may aptly be described as the Osler of modern geriatric medicine. Discouraged by the false assumption that geriatrics focuses solely on the senile, the medical profession has unfortunately been slow to investigate the potentials of persons who are in the later years of life.

Although geriatrics is concerned with the aged, its practitioners must be more alert to the potentials of human maturation and the prevention or, at least, the delay of premature human deterioration. Society can have little respect for the attitude that the elderly person is one to be tolerated and the sooner his days are terminated the better for all. This volume should be a handbook for daily reference by teacher and student. It contains highlights of current knowledge concerning the changes that appear in the human body with the passage of time. The nutrition, immunologic response, functional activity, and homeostasis of aging are carefully evaluated. It is high time for the medical curriculum to include the problems, medical and social, of maturing citizens. The spectacular accomplishments in surgery, the shift of electrolytes, the caprices of the endocrines, and disorders of organic function, exciting as they are to the inquiring student of medicine, fail to portray the patient as a human being with hopes, fears, depressions, and that tremendously important function, human maturation. Living should have depth and breadth as well as length.

With the editor are associated a distinguished list of American physicians. The contributions of A. J. Carlson on physiological changes of normal senescence and the chapter by Jean Oliver on the anatomic changes of normal senescence are classics. Oscar J. Kaplan writes with conviction on the intellectual changes of normal senescence. Frederic D. Zeman has described the medical care of the normal aged. The medicolegal aspects of senility are evaluated by A. W. Stearns. Surgery is surveyed by recognized authorities. The disorders of the mind and nervous system are discussed by Overholser, Fong, and Camp. The various systems of the body and the influences wrought by advancing age are accurately described. The subject matter is presented in orderly sequence. The type, illustrations, format, and plates are attractive. The style of writing varies with the individual contributor, although each section covers well its own field. The references at the end of the various chapters are few but well chosen. Medical education is in a state of transition. Those who shape its policies should respond to the needs of their older patients. They will find invaluable assistance in clarifying many of the heretofore dark areas by reference to this book.

Theory and Problems of Adolescent Development. By David P. Ausubel, M.D., Ph.D. Cloth. $10. Pp. 580. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1954.

This book is a successful and detailed attempt to "organize around a comprehensive and integrated theory of adolescent development the vast quantity of research data that has accumulated over the past fifty years in the field of adolescent psychology." Its chief fault is its length; some condensation could have been achieved without the loss of any of the important ideas in which the book abounds. Adolescence is a critical period that is in great need of wider understanding. It is described at the outset as a stage in personality development. Throughout the book the author compares the problems of adolescents in our civilization with those in various contemporary but more primitive civilizations. These problems are classified as psychobiological and psychosocial. In the section on psychobiological problems the psychological transition from childhood to adulthood; the physiological aspects of pubescence, physical growth, and motor development; the psychological accompaniments of bodily change; the maturation of personality; parent-child relationships; and the meaning of emancipation, moral and religious development, and intellectual growth and interest patterns are discussed.

The section on psychosocial problems takes up the relationship of adolescents to the wider community, the prolongation of adolescence in our modern society, social class differences, the importance of social relationships, various types of adolescent groups, including cliques and gangs and the group-rejected adolescent, the importance and varieties of sexual expression in adolescent development and adjustment, courting behavior, and the need for a new approach to sex education, schooling, and vocational choice. The author believes that better vocational guidance would eliminate much of the need for psychotherapy later in life and that psychotherapy in young adults that does not include vocational counseling is apt to be fruitless. He also believes that greater opportunity should be afforded teenagers for work experience. The final section deals with behavior disorders, delinquency (much of which is transitory and therefore relatively unimportant), mental hygiene, and counseling. A bibliography is appended to each chapter, and the index is adequate. This book should find a wide audience among physicians, educators, and all who deal with adolescents.

The Development of Medical Bibliography. By Estelle Brodman, Assistant Librarian for Reference Services, Armed Forces Medical Library, Washington, D. C. Medical Library Association, publication no. 1. Cloth. $5. *Pp.* 226, with 11 illustrations. Archives Curator, Medical & *Chirurgical Faculty of State of Maryland, Baltimore 1, 1954.*

Dr. Brodman took under consideration "lists of books or journals pertaining to medicine in general but not to any of its subdivisions or specialties." This material she circumscribed somewhat further, as she explains. She then selected for discussion the most significant lists. These, and others that she did not discuss, are registered in an appendix. The result is the first history of its kind considerable enough to be useful as a librarian's reference work. It is, nevertheless, brief and readable. The unobtrusive euphony of clear, unadorned sentences leads the reader into an account so well knit that collateral biographical and historical sketches, or comments on medical journals and medical education, lighten and do not confuse the narrative. The five chapters of the text are entitled, respectively: The Infancy of Medical Bibliography, Development of Bibliographic Technique in the Seventeenth Century, Golden Age of Individual Bibliographers, Development of Cooperative Bibliography, and The Present Situation.

At the end, the reader is prepared to believe that a bibliographer born as early as 1630 sustained a nervous breakdown. Why not? The history of medical bibliography has been, and is, one of gallant failure. "Each time," writes Dr. Brodman, "medical bibliography has reached the point where it seemed to have gained mastery over the literature, the literature has grown in

---

These book reviews have been prepared by competent authorities but do not represent the opinions of any official bodies unless specifically so stated.

size or changed in form, or otherwise made the previous techniques of medical bibliography inadequate to the tasks." She does not despair, however, but writes, ". . . medicine must continue making its present bibliographic techniques as adequate as possible so that it can gain time to do the fundamental research necessary to determine how medical bibliography must be changed to fulfill its mission. . . . But above all, it must have the interest of really good thinkers and the cooperation of the physicians using the literature." A less capable scholar and less skillful expositor could have written a book several times as long with half the effect. Dr. Brodman writes ". . . my erudition may well be doubted," in which respect her uneasiness seems entirely unwarranted.

Affections de la chevelure et du cuir chevelu: Anatomie, physiologie, pathologie, hygiène et thérapeutique. Publié sous la direction de A. Desaux. Par A. Boutelier, et al. Cloth. 5.650 francs. Pp. 780, with 298 illustrations. Masson & Cie, 120 boulevard Saint-Germain, Paris 6e, 1953.

This is a comprehensive work on diseases of the scalp and hair by 14 collaborators. All of the contributors are authorities on the subjects assigned to them. The volume has an excellent index and voluminous references. The illustrations, many of which have been taken from "Nouvelle pratique dermatologique," are excellent. On his recent visit to the United States, the author expressed his regret that the subscribers to the French journals were so few in the United States. It was explained to him that a reading knowledge of French and German is no longer required in premedical courses and it is no longer necessary for physicians to go to Europe for postgraduate training. It is unfortunate that this valuable work will be read by so few in this country unless an English translation is written. Every conceivable phase of diseases of the scalp and hair has been thoroughly explored. The last chapter in the volume, "Psychopathologie du cuir chevelu" by Verdeaux, describes beliefs and superstitions about the hair from prehistoric days to the present. This chapter is not only informative, but delightful in manner of presentation.

Neurosurgery of Infancy and Childhood. By Franc D. Ingraham, M.D., Associate Professor of Surgery, Harvard Medical School, Boston, and Donald D. Matson, M.D., Assistant Professor of Surgery, Harvard Medical School. Cloth. $15. Pp. 456, with 381 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1954.

Neurosurgical conditions encountered in infancy and childhood differ in many respects from those in adults. Not only are congenital anomalies more frequently found, but the type and location of neoplasms are not similar in the two age groups. Moreover, surgery in children poses special problems. Because neurosurgeons not associated with a children's hospital are infrequently called on to treat neurological diseases of the young, they rarely have an extensive experience in this field. For these reasons, it is gratifying to have a monograph written by two surgeons who have contributed much to the subject. The authors discuss the diagnosis, treatment, and prognosis of all the common neurological conditions of childhood requiring operation, such as congenital anomalies, hydrocephalus, trauma, spinal and intracranial tumors, infection, cerebrovascular disorders, epilepsy, and lead encephalopathy. The subject matter is clearly and concisely presented. The chapters on congenital anomalies and hydrocephalus are particularly good. The discussion of intracranial tumors follows orthodox lines, and most neurosurgeons would agree with the conservative viewpoints expressed. There are few chapters that are not outstanding. The surgery of epilepsy is not dealt with as well as the other topics. Perhaps more emphasis might be placed on rehabilitation, since it has such great possibilities in children with neurological disorders. The generous use of well-chosen and excellently reproduced illustrations enhances the value and appearance of the monograph. The bibliography is adequate and the index satisfactory. Although this book is written for the specialist, it should be of value to all physicians who require a ready source of reliable information. Neurologists and neurosurgeons will find in it the answers to many questions that constantly arise. It is recommended to every pediatrician as a handy reference book on the value and limitations of neurosurgery in childhood.

The Surgery of Pulmonary Tuberculosis. By James H. Forsee, A.B., B.S., M.D., Colonel, M.C., U. S. Army; Chief, Surgical Services, Fitzsimons Army Hospital, Denver. Cloth. $6.50. Pp. 208, with 70 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1954.

This book is the first American treatise in 15 years devoted exclusively to the surgery of pulmonary tuberculosis. In the foreword, Evarts A. Graham notes: "In the short period since the end of World War II there has been practically a revolution in our thinking about the performance of direct surgical procedures for the purpose of removing the diseased portion of the lung." Though resection and extirpation were not successful in the 1890's because of the prohibitive high mortality and were replaced by the safer collapse operations of the 1920's, they have been revived since 1945 and are here to stay until an effective nonsurgical treatment is found. Colonel Forsee has presented a full and authoritative text of the surgery of pulmonary tuberculosis since the advent of antibiotics and chemotherapy. The book reflects the completely altered treatment of the disease and brings to a realization the long-sought goal of the effective surgical removal of tuberculous lung tissue. Its three sections deal with principles in application of surgery in pulmonary tuberculosis, operative surgical procedures, and experiences. Complete details of operative techniques, procedures, and preoperative and postoperative management are enhanced by a discussion of the proper timing of surgical intervention. A surgical approach stressing medical aspects and the necessity of the cooperative efforts of surgery and medicine further to improve therapy as well as correlation of pathological findings of the surgically removed lung tissue are valuable features. This attractive volume should appeal to all associated in any way with the therapy and management of tuberculous patients.

A Manual of Tropical Medicine. By Thomas T. Mackie, M.D., Colonel, M.C., A.U.S., Chairman, American Foundation for Tropical Medicine, New York, George W. Hunter III, Ph.D., Colonel, M.S.C., U.S.A., Chief, Section of Parasitology-Entomology, Fourth Army Area Medical Laboratory, Brooke Army Medical Center, Fort Sam Houston, Texas, and C. Brooke Worth, M.D., Field Staff Member, Division of Medicine and Public Health, Rockefeller Foundation, New York. Second edition. Cloth. $12. Pp.. 907, with 304 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, England, 1954.

This volume contains many improvements over the first edition. It has been expanded through a policy of shifting emphasis and adding new chapters or including additional material, especially on viruses, trachoma, leprosy, toxoplasmosis, nutritional diseases, epidemic hemorrhagic fever, etc. The present revision retains the compactness of the first edition with the addition of more recent knowledge. It will be especially valuable as an addition to the libraries of those interested in tropical diseases, an interest stimulated by political unrest and new and expanding foreign aid and advisory programs. Because of its compactness the book is especially valuable as a ready reference without voluminous controversial material. It is probably the best available text for this purpose and can be recommended both for those going into foreign areas and the physician in the United States who, because of the present ease of international travel, may be confronted with almost any of the diseases described in this book.

6

International Symposium: The Dynamics of Virus and Rickettsial Infections. Editors: Frank W. Hartman, M.D., Frank L. Horsfall, Jr., M.D., and John G. Kidd, M.D. Cloth. $7.50. Pp. 461, with illustrations. Blakiston Company (division of Doubleday & Company, Inc.), 575 Madison Ave., New York 22, 1954.

In October, 1953, an international symposium on the dynamics of virus and rickettsial infections was held in Detroit under the auspices of the Henry Ford Hospital. The papers presented by 33 leading investigators in these fields and the discussions that followed are recorded in this book. The topics are discussed under five major headings. The first deals with the mechanisms of infection and includes papers on biochemical, genetic, and physiological approaches to an understanding of the problem. The second section deals with ecology and pathogenesis. The third is concerned with mechanisms of immunity and includes timely discussions on viral vaccines. The fourth section takes up new developments in diagnostic procedures. The concluding portion discusses approaches to prophylaxis and therapy. Up to the present, such approaches have been empirical, since information on the biochemistry of virus multiplication is still incomplete. It is expected that the data now being accumulated on the effect of chemical substances on virus-infected tissues and on the phenomena of virus interference will lead to a rational approach to the problem of therapy. The excellent review of current information on virus and rickettsial infections presented in this book should be of value not only to workers in these specialties but also to physicians.

Standards and Recommendations for Hospital Care of Newborn Infants, Full-Term and Premature. American Academy of Pediatrics, Committee on Fetus and Newborn. Paper. Pp. 144, with illustrations. The Academy, 610 Church St., Evanston, Ill., 1954.

The purpose of this book is "to define optimum standards for those procedures which will safeguard the physical well-being of the newly born infant and foster wholesome and normal relationships between him and his environment." The book does that and more. It discusses nearly all contingencies of the nursery, defines arbitrary terms, contains facsimilies of recommended nursery records, and furnishes diagrammatic layouts for various sizes of nurseries. Ideal tables for statistical data are outlined.

It is obvious that the teacher and the research worker, as well as the clinician, had a hand in the compilation of this book. The format is pleasing to the eye. Essential items are printed in boldface type. The lack of verbosity is forceful, and the short pithy sentences ring with authority. An index is supplied. Gastric suction as a preventive measure for aspiration pneumonitis is not mentioned; nor are emergency lighting and electric circuits discussed. Fire escapes and extinguishers and provisions for procedures during disasters are not mentioned. It is unfortunate that the double standard of private and service patients is maintained in this book. The resident supervises the babies of service patients, while the pediatrician is summoned for the private patient. The liaison between the resident and the pediatrician assigned to service patients is not stressed. The Chicago Board of Health insists on equal care of all babies; premature babies of service patients as well as of private patients must be seen by qualified pediatricians. Despite these few shortcomings, this is an important book; it should be of great value to the physician, nurse, and hospital administrator.

Cotton Mather: First Significant Figure in American Medicine. By Otho T. Beall, Jr., and Richard H. Shryock. Publications of Institute of History of Medicine, first series: monographs, volume V. Reprinted from vol. 63 of Proc. Am. Antiquarian Soc. Cloth. $4. Pp. 241, with 2 illustrations. Johns Hopkins Press, Homewood, Baltimore 18; Oxford University Press, Amen House, Warwick Sq., London, England, E.C.4, 1954.

Cotton Mather, whom the author calls the first significant figure in American medicine, was first drawn to medicine, but because of his stammering he turned to theology. In the late 17th century, the two disciplines frequently went hand in hand, and the requirements for practitioners of either were not rigid. He got over his stammering and maintained a great interest in medicine throughout his life. He prescribed at times for friends and neighbors but never entered into medical practice as a major endeavor. Throughout his life he collected medical literature, which in those days was meager, and finally undertook to write a comprehensive book on medicine. It is noteworthy that his theological writings were interspersed with such phrases as "palsy of an unsteady mind," "cancer of envy," and "tympany of pride." The second half of this book is devoted to reprinting excerpts from his "The Angel of Bethesda," a curious mixture of theology, classical allusions in Greek and Latin, and the medical knowledge of his times. His book consisted of 66 chapters, or capsula as he called them, and covered a wide range of subjects, including dentistry, pharmacology, obstetrics, ophthalmology, otology, pediatrics, psychiatry, and euthanasia. This work was never published, probably because it was addressed simultaneously to physicians and to the public at large and thus failed to appeal to either audience. Throughout the book sickness is considered, as was current in that day, a divine punishment for original sin. Following this belief Mather did not approve of treating syphilitics. Perhaps Mather's chief contribution to medicine was in the field of public health. He was always interested in medical care for the poor, and he advocated smallpox vaccination at a time when the physicians of the country opposed it. Incidentally, he believed smallpox to be caused by some form of micro-organism or aminalcule, but lacking any palpable proof this belief also went unheeded. This book is of interest chiefly as an odd bit of medical history.

Add Life to Your Years. By Ernst P. Boas, M.D. Cloth. $3.50. Pp. 278. Medill McBride Company, 200 E. 37th St., New York 16; McClelland & Stewart, Ltd., Toronto, Canada, 1954.

As a pioneer in the study of chronic illness and as a practicing cardiologist the author has long been interested in the problems of old age. In his "Treatment of the Patient Over Fifty" (Chicago, the Year Book Publishers, revised edition, 1944), he described for physicians the medical management of disease in older patients. In the present volume, he has attempted to give the layman ". . . a rational approach to the understanding of aging and disease by describing in simple terms the aging process and the natural history of disease in older persons." He hopes thereby to promote the intelligent cooperation of elderly patients with their physicians, who are handicapped by the persistence of outworn pessimistic attitudes. The three introductory chapters deal with the aging process, general rules for healthful living, and the interpretation of symptoms. The body of the book is divided into 12 chapters, each of which deals with a disease group or with the disorders of a certain anatomic division of the body. The concluding chapters take up euthanasia, of which the author disapproves, and social attitudes toward aging. Dr. Boas has succeeded in giving the layman a readable, straightforward account of old age and its problems. He has a real knack for simplifying complicated subjects, as evidenced in his remarks on arteriosclerosis and hypertension. Physicians may recommend the book to their patients with the assurance that the best current medical thinking is presented in understandable fashion and that the author's viewpoints are those of a sensible and experienced practitioner.

Methods in Medical Research. Volume 6. J. Murray Steele, and others, editors. Governing board: Irvine H. Page, Chm., et al. Cloth. $7. Pp. 271, with illustrations. Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1954.

Each successive volume of this valuable series contributes much to the standardization of methodology in laboratory and clinical experimentation. Perhaps the most thought-provoking section in the present volume is that on statistics in medical research. The authors of this section shed a bold, cold light on attempts to create an aura of statistical validity by application of statistical tests to data secured from experiments of bad design. Emphasis is placed not on more knowledge of statistical tests but on a realization of the background for the accumulation of statistics in any type of medical investigation. Although the section on design and construction of metabolism cages may be of little interest to the clinical experimenter, it describes many ingenious devices for the control and measurement of variables in the experimental design. Other sections deal with methods in environmental medical research and human genetics. The volume deserves a place in the library of all interested in clinical and laboratory research.

Perimetry. By Joshua Zuckerman, B.Sc., M.D., C.M., Fellow of American Academy of Ophthalmology and Otolaryngology. Cloth. $10. Pp. 391, with 156 illustrations. J. B. Lippincott Company, 227-231 S. Sixth St., Philadelphia 5; 2083 Guy St., Montreal, Canada; British agent—Sir Isaac Pitman & Sons, Ltd., 39 Parker St., London, W.C.2, England, 1954.

The author has produced a modern, unusual, practical, and comprehensive work. By arranging his book into three main sections, he methodically and gradually inculcates and crystalizes the concepts of perimetry. Some of the sections are repetitious, but justifiably so, because they enable the student to long remember the basic and fundamental facts presented. The schematic presentation depicting the general and precise sites of lesions, the visual pathway, and the corresponding field defects and their descriptions provides an excellent review for the reader. The author points out the pitfalls that the examiner should avoid in the examination of the field of vision and his interpretation of field defects. No student of ophthalmology, resident, faculty member, or clinician can consider his library complete without this book.

Physiologie des Gehörs. Von Dr. Otto F. Ranke, o.ö. Professor der Physiologie der Universität Erlangen. **Physiologie der Stimme und Sprache.** Von Dr. Hans Lullies, o. Professor der Physiologie der Universität des Saarlandes, Saarbrücken. Lehrbuch der Physiologie in zusammenhängenden Einzeldarstellungen. Unter Mitarbeit einer Reihe von Fachmännern. Herausgegeben von Wilhelm Trendelenburg und Erich Schütz. Cloth. 39.60 marks. Pp. 302, with 210 illustrations. Springer-Verlag, Reichpietschufer 20, (1) Berlin W. 35 (West-Berlin); Neuenheimer Landstrasse 24, Heidelberg; Göttingen, 1953.

This monograph, one of a series constituting a textbook of physiology, describes the physiology of hearing, voice, and speech. The physical, anatomic, and functional bases underlying voice, speech, and hearing are discussed in detail, not only from the standpoint of the human being but also with reference to comparative physiology, if this has a bearing on the subject. Although little of immediate clinical interest is included, the book can serve as an excellent text for the physiologist and should prove of interest to the otolaryngologist interested in the basic physiological principles relating to his specialty. The illustrations are well chosen, the bibliography is extensive, and the typography is excellent. The style of both authors is lucid.

Dynamics of Growth Processes. By L. M. Kozloff and others. Edited by Edgar J. Boell. Symposium of Society for Study of Development and Growth. Cloth. $7.50. Pp. 304, with illustrations. Princeton University Press, Princeton, N. J.; Oxford University Press, Amen House, Warwick Sq., London, E.C.4, 1954.

The 13 articles in this volume originally were presented at the 11th Growth Symposium at Williams College in June, 1952. In the past, papers delivered at these symposiums were published as supplements to the journal *Growth*. Three of the articles are concerned with growth in higher plants. The rest range from reproduction of viruses through growth of population. Physicians probably will be most interested in the articles on the aspects of growth in higher animals: Gaunt's article on chemical control of growth in animals; Greulich's on the relationship between skeletal status and physical growth and development in children; and Dickerson's on hereditary mechanisms in animal growth. Sholl's paper on regularities in growth curves gives a simple explanation of the uses of statistical methods in the study of growth. There are extensive bibliographies at the end of each paper, but the references necessarily are limited to articles published prior to the middle of 1952. There is an extensive author index and an adequate subject index. The graphs and diagrams are clear, and the printing and binding are good.

The Technique of Psychotherapy. By Lewis R. Wolberg, M.D., Director, Postgraduate Center for Psychotherapy, New York Medical College, New York. Cloth. $14.75. Pp. 869. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1954.

This is a unique and valuable book on psychotherapeutic technique written by the author of "Medical Hypnosis" and "Hypnoanalysis." According to the preface, it is based on transcribed recordings of hundreds of treatment sessions conducted by many therapists and on the observation of students in psychoanalytic training. It describes the therapeutic methods used and results obtained by a large group of psychiatrists, caseworkers, and clinical psychologists. The author's seminars in psychotherapy form the basis of the book. This book will be useful to students of psychiatry and to practicing psychotherapists and is intended to enhance the constructive use of the self in the therapeutic situation. It presents a combination of methods from the fields of psychoanalysis, psychobiology, psychiatric interviewing, casework, and psychological counseling. There is much verbatim material from actual interviews, in addition to discursive text. In this respect, it is different from the usual descriptive textbook and so seems to be a real contribution.

Electrocardiography. By E. Grey Dimond, M.D., Professor and Chairman, Department of Medicine, University of Kansas Medical Center, Kansas City. Cloth. $14. Pp. 261, with 272 illustrations. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1954.

This book is an outgrowth of a course of lectures on electrocardiography given by the author, first at the School of Medical Aviation, Randolph Field, Texas, and later at the University of Kansas Medical Center, Kansas City, Kan. The subject is presented clearly. Only a few pertinent references are given. Many illustrations and diagrams are used. Since the approach is clinical, the author discusses only the direct-writing machines as the most practical type for the practitioner. The basic physical principles of electrocardiography are described briefly with the aid of numerous diagrams. Most of the book is concerned with the clinical application of electrocardiography. The subject matter covered includes arrhythmias, myocardial disease, hypertrophy, electrolyte disturbances, and congenital heart disease. Typical electrocardiograms accompany the text. A unique departure from ordinary textbooks is chapter 18, entitled "Authority vs. Authority." In this chapter, authorities from various medical centers throughout the country answer the question, "What are the electrocardiographic evidences of left ventricular hypertrophy?" The widely divergent views expressed indicate the unsettled state of present knowledge of some phases of electrocardiography. This textbook is recommended for the beginner in electrocardiography whether he is a medical student or a practicing physician.

Cancer of the Lung (Endemiology): A Symposium. Edited by Dr. Johs. Clemmesen. Reprinted from Acta Unionis internationalis contra cancrum, Prof. J. H. Maisin, editor. Cloth. $6; 42/-; 2000 francs. Pp. 210, with illustrations. Council for International Organizations of Medical Sciences, Paris, 1953.

This symposium was held at the Institut du Cancer, Louvain, Belgium, in July, 1952. Three short introductory statements are followed by 16 discussions by various investigators on various aspects of the endemiology of cancer of the lung; each discussion has a brief summary. Among these are etiological implications of the geographical distribution of lung cancer; occupational factors; smoking and tobacco in carcinoma of the lung; cancer of the lung in man and lower animals; and statistical data on lung carcinoma in Austria, the United States, Belgium, France, the Netherlands, Norway, and Denmark. Those interested in the endemiology of cancer of the lung will find significant information in this book.

The Painful Phantom: Psychology, Physiology and Treatment. By Lawrence C. Kolb, M.D., Section of Psychiatry, Mayo Clinic, Rochester, Minn. Publication number 235, American Lecture Series, monograph in American Lectures in Neurology, edited by Charles D. Aring, M.D. Paper. $1.50. Pp. 50. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1954.

This monograph includes material from two divergent sources, namely patients who have had prefrontal lobotomies and patients who have had amputations. It is pointed out that those who have undergone prefrontal lobotomies seem to be indifferent to pain, but, nevertheless, retain the ability to perceive painful stimuli. When lobotomy has been performed for a painful organic condition such as cancer, the patient perceives pain in the diseased region when he is disturbed emotionally. It is suggested that the information derived from patients who have undergone prefrontal lobotomy for painful conditions substantiates the observations of Freud, that a complaint of pain may represent a symbolization. Not only the psychological implications of the painful phantom are discussed, but the physiology and treatment are presented also. Anyone interested in the painful phantom would do well to read this book.

Nurse and Patient: An Ethical Consideration of Human Relations. By Evelyn C. Pearce, S.R.N., R.F.N., S.C.M. Foreword by The Rt. Hon. The Lord Webb-Johnson, G.C.V.O., C.B.E., D.S.O. Cloth. $3. Pp. 182. J. B. Lippincott Company, 227-231 S. Sixth St., Philadelphia 5; 2083 Guy St., Montreal, Canada; British agent—Sir Isaac Pitman & Sons, Ltd., 39 Parker St., London, W.C.2, England, 1954.

The author of this book is one of the world's foremost educators in medical nursing. The book is clearly written and concise and holds the reader's interest. The human relationship between patients and professional helpers is emphasized, and nursing is portrayed as both an art and a science. The author points out the arduous training required of those who take up nursing and stresses the sympathetic attitude necessary in those who care for the ill. She includes in this group not only the nurse, but the physician, the hospital administrator, and others. The book discusses the importance of proper consideration for the patient's family and friends. It should be read by all nurses and physicians.

Pratique médico-chirurgicale. Publiée sous la direction de A. Lemierre, professeur honoraire à la Faculté de médecine de Paris, H. Mondor, professeur de clinique chirurgicale à la Faculté de médecine de Paris, A. Ravina, médecin de l'Hôp. Beaujon et J. Patel, professeur agrégé à la Faculté de médecine de Paris. Secrétaire général: A. Plichet. Tome I: Abadol-Azotique. Tome II: Babeurre-Constitutions psychopathiques. Tome III: Constriction-Enophtalmie. Tome IV: Entérectomie-Héroïnomanie. Tome V: Herpes-Mérycisme. Tome VI: Mesentère-Panophtalmie. Tome VII: Pansements-Radiodiagnostic. Tome VIII: Radioéléments-Synovectomie. Tome IX: Synovites-Zona. Tome X: Médecine légale sociale; médecine du travail. Fourth edition. Half-cloth. 68,000 francs per complete set. Pp. 1077, with 221 illustrations; 927, with 271 illustrations; 1023, with 305 illustrations; 1097 with 364 illustrations; 976, with 324 illustrations; 1009, with 332 illustrations; 1064, with 316 illustrations; 1067, with 339 illustrations; 1052, with 323 illustrations; 1928 with 86 illustrations. Masson & Cie, 120 boulevard Saint-Germain, Paris 6ᵉ, France, 1953.

The French "Pratique médico-chirurgicale," now appearing in this entirely revised and rewritten edition, consists of 10 well-printed and well-bound volumes. Its authors state that this Pratique is not a dictionary, an encyclopedia, or a collection of textbooks but a complete review, in the broad sense, of French thoughts on internal medicine and surgery and of the authors' specialties. The authors insist that they have maintained the traditional concept of unity of medicine throughout the work. The editors have purposely selected, often under the same title, an alphabetically classified wealth of material essential to the general practitioner, surgeon, and specialist. It is not possible to cover all of the volumes in this review.

Volume 1 deals with the problems of inflammation, abscesses, and nonsyphilitic and tuberculous infections and their varying locations. There is an excellent presentation of the infections of the subdiaphragmatic space. The clinical development of these infections and the forms that they take are extensively described. There are discussions on contusions and wounds of the abdomen; World War II experiences in abdominal trauma; normal parturition and induced parturition in relation to pregnancy, abortion, and the pathology of the newborn; acidosis and alkalosis and their close association to diabetes mellitus and surgery; diet and nutrition, including the caloric content of different dietary components and the nutrition of the newborn and the child; amputations and their indications and contraindications; and limbs and their segments, the tongue, and the breast, with many practical details on anesthesia, postoperative care, etc. Other chapters in this volume contain information on analgesic medication and anesthesia, both local and general, including the recent additions to knowledge in this field and the physiology of anesthesia; combined anesthesia with modern apparatus, in which considerable credit is given to the English-speaking countries; different types of aneurysms, angiography, and angiocardiography; types of anemia, described clinically and anatomically; hemograms; cardiac diseases, asystole, congenital malformations, diseases of the vessels; abdominal arteriography and the latest developments in arterial and cardiac surgery; and arthropathies and fractures and their treatment. There is a short review on the pathology of aviation medicine.

Volumes 2 and 4 include extensive discussions on the pathology of the liver and of the biliary tract. The technique of biliary manometry and cholangiography as developed by Mallet-Guy, the limits of this technique, and the causes of error are also discussed. The pathology of the colon and of the cecum are two of the most important chapters in volume 2, and the discussion is amply supported by many roentgenograms. There are discussions on surgery of the heart and primary vessels; American contributions and other recent additions to knowledge in this specialized field; and present indications and contraindications, preparation, and different techniques for such operations, including systematic illustrations. Volume 3 presents a thorough discussion of the study of foreign bodies in limbs and large viscera. Important chapters are given to the discussion of injuries of the skull and brain and of encephalitis. The various techniques used in the diagnosis of cerebral lesions, such as electroencephalography, encephalography, and ventriculography, are outlined as components of a neurological examination. The relationship of the ophthalmologist and otolaryngologist to the examination is discussed. There are chapters devoted to the pathology of the duodenum; Meckel's diverticulum; growth of the child; endocarditis, eczema, and other types of dermatitis; and the entire subject of diabetes mellitus and various other disturbances of the glands of internal secretion. Volume 4 contains discussions on the pathology of the gastrointestinal tract in relation to the multiple surgical problems of this tract; surgery of the small intestine and stomach in relation to certain classical surgical procedures; the problem of pregnancy, its diagnosis, course, abnormalities, and complications; and the pathology of different types of goiters in relation to symptoms, treatment, and pathology.

In compiling these 10 volumes, the authors have shown a deep understanding of the unity of medicine and surgery and the broad medical concepts now existing in France.

Handbuch der Inneren Medizin. Begründet von L. Mohr und R. Staehelin. Herausgegeben von G. v. Bergmann, W. Frey und H. Schwiegk. Band 6. Teil 1: Konstitution, allergische Krankheiten, Krankheiten der Knochen, Gelenke und Muskeln. Bearbeitet von F. Curtius et al. Teil 2: Krankheiten aus äusseren physikalischen Ursachen, Ernährungskrankheiten, Vitamine und Vitaminkrankheiten. Bearbeitet von W. H. Adolph et al. Fourth edition. Cloth. 165 marks; 160 marks. Pp. 1042, with 466 illustrations; 1026, with 77 illustrations. Springer-Verlag, Reichpietschufer 20, (1) Berlin W. 35 (West-Berlin); Neuenheimer Landstrasse 24, Heidelberg; Göttingen, Germany, 1954.

This sixth volume of the rehabilitated Mohr and Staehelin system of medicine is already in its fourth edition. Part 1 covers constitution, allergy, and diseases of the locomotor system. The section on constitution, by Prof. F. Curtius, consists of an introduction; a brief historical review; a classification and discussion of different constitutions—their relation to race, heredity, environment, and other factors—and a summary. The section also includes an extensive discussion of the morphology and physiology of the different constitutional types and their bearing on disposition to disease, and an equally complete discussion of the methods of investigation, diagnosis, and treatment of constitutional maladies. This part of the work is profusely illustrated. The section on allergy, by Prof. Hugo Hammerer, consists of an introduction covering the etiology of the condition, the allergic diathesis, and the principles of diagnosis and treatment. This is followed by specific descriptions of allergic phenomena as they are manifested in the various organs and tissues and by a discussion of their relation to such diseases as gout and rheumatism. The section on diseases of the locomotor system, by Prof. R. Schoen and Prof. W. Tischendorf, opens with a discussion of the anatomic and physiological aspects of skeletal and muscular diseases. It also contains sections on hereditary and developmental influences and the diseases and deformities produced by them; the relationship of various locomotor diseases to changes in the body chemistry; hormonal and neurological factors; neoplasms and trauma; and rheumatic and rheumatoid diseases. This section is illustrated with excellent reproductions of roentgenograms.

In the first section of part 2, Prof. F. Grosse-Brockhoff discusses underlying principles of conditions caused by external heat, particularly the effect of high temperatures on the circulation, and the clinical features of heat cramp, sunstroke, heat exhaustion, local burns, and hypersensitivity to heat. The same author discusses the varied effects of different degrees and durations of generalized chilling on metabolism, respiration, and circulation. There are subsections on the treatment of the conditions described, on the local effects of cold, and on acclimatization to heat and cold. A section on electrical injuries follows, then discussions of the effect of physical shocks and vibrations and of exposure to explosions, excessive noise, and kinetic forces. Subsections on the treatment of these traumas follow. Prof. Gerhard Schubert discusses the damage caused by various forms of radiation, including x-rays and radioactive substances, on the various organs and tissues of adults and of embryos in uteri. The section ends with descriptions by Dr. A. von Muralt of the bodily damage produced by changes in air pressure and by lack of oxygen—mountain sickness, air sickness, the bends. The section on nutritional diseases is contributed by Prof. Hans Glatzel. A discussion of general nutritional principles is followed by sections on hunger, thirst, undereating, and overeating, with specific consideration of the various chemical elements concerned in obesity and emaciation. There are descriptions of the symptoms produced by varied excesses and deficiencies in diet. There are also subsections on therapy; the role of coffee, tea, cocoa, and alcoholic drinks in nutrition; and artificial feeding. In the section on vitamins and avitaminoses, Prof. Hans Sellweger and Dr. William H. Adolph discuss each of the common vitamins, its chemistry and physiology, and the clinical manifestations in various organs and tissues produced by its deficiency or lack. Several vitamins whose role in human nutrition is still in doubt are briefly described.

The illustrations—photographic, schematic, or in color—are all first class. Each main section is followed by an extensive international bibliography, and the authors cited are listed in an index of names at the end of volume 2. The subject index covers 80 pages. The text is written in clear, uninvolved German, and there are no obvious gaps or errors in the discussions. The work is a storehouse of well-organized information.

Acute Pulmonary Edema. By Mark D. Altschule, M.D., Assistant Professor of Medicine, Harvard Medical School, Boston. Modern medical monographs 10. Cloth. $3.50. Pp. 68. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1954.

This well-written monograph concisely presents the available facts about a condition that is poorly understood. The subject is covered under the headings clinical manifestations, basic physiological considerations, pathological physiology, and treatment. Separate subsections, autonomous themselves, treat various phases of the problem, such as shock, pulmonary fluid, and dynamics. The monograph contains one table and a bibliography consisting largely of references to animal experiments; there are no illustrations. In discussing the pathological physiology of pulmonary edema, the author offers an extremely detailed critique of previously held theories. He then reviews the known facts and clearly indicates that no single valid theory for the origin of pulmonary edema can be formulated at present. In the very complete section on treatment, theoretical concepts are seasoned with the author's practical experience, making this a useful and practical guide. There are errors, there are opinions no longer accepted or not backed with sufficient data to be convincing, and there are inconsistencies; however, the monograph is a thought-provoking work of interest to every serious student of medicine. Pulmonary edema is common to all branches of medicine. Any attempt to clarify the problem and furnish material for more successful treatment should be received with keen interest by all.

The Pharmacologic Principles of Medical Practice: A Textbook on Pharmacology and Therapeutics for Medical Students, Physicians, and the Members of the Professions Allied to Medicine. By John C. Krantz, Jr., Professor of Pharmacology, School of Medicine, University of Maryland, Baltimore, and C. Jelleff Carr, Professor of Pharmacology, School of Medicine, University of Maryland. Third edition. Cloth. $12. Pp. 1183, with 89 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1954.

The latest edition of this book maintains the high standards set by the first two editions. Owing to the rapidity with which the pharmacological world undergoes change, several alterations have been introduced in this edition, among them being expansion of the chapters on antibiotics, tuberculosis, arthritides, and hypertension. Although the chapters on rickettsial diseases and the origin of new drugs have been deleted, the essentials of these chapters have been condensed and included elsewhere in the text. A new chapter on therapeutic aids has been included, while the chapter on the treatment of syphilis has been reduced. Many new illustrations, tables, and references have been added. As a textbook for those to whom it has been addressed, it is eminently informative, readable, and up-to-date.

Die Lungenresektionen: Anatomie, Indikationen, Technik. Von Dr. Med. R. Zenker, o. ö Professor, Direktor der chirurgischen Universitätsklinik Marburg/Lahn, Dr. Med. G. Heberer, Privatdozent und Oberarzt, und Dr. Med. H. H. Löhr. Cloth. 168 marks. Pp. 370, with 186 illustrations. Springer-Verlag, Reichpietschufer 20 (1) Berlin W. 35 (West-Berlin); Neuenheimer Landstrasse 24, Heidelberg Göttingen, Germany, 1954.

This is one of the most complete monographs on the subject of lung resection that has been published. It is beautifully done in every respect. The bibliography is excellent and complete. The illustrations, as is typical of most German publications, are superb. The extensive use of color photography adds greatly to the value of the book. Bronchoscopic views of the various bronchial openings superimposed on the bron tree are shown in the detailed section on anatomy. Not the most frequent findings in the lung are described but the anomalies and their relative frequency. A good hist review of lung resection is given, and the various types of resection and their indications are described in detail. A cellent chapter concerning the position of the patient for operations and the types of anesthesia to be employe various procedures is included. Details concerning the nique of the various types of excisions are given, and emphasis is placed on the preoperative and postoperative of patients undergoing lung resection as well as a consi tion of the complications that may occur. The monogra so complete that anyone interested in diseases of the pulm system, particularly from an anatomic, pathological, and gical standpoint, should not be without it.

Resection-Reconstruction of the Hip: Arthroplasty with an A Prosthesis. By Jean Judet, Robert Judet, Jean Lagrange and Jean Du Edited by K. I. Nissen. [Original edition in French published by pansion scientifique française, Paris 6e, 1952.] Cloth. $7. Pp. 151, 101 illustrations. Williams & Wilkins Company, Mount Royal and ford Aves., Baltimore 2; E. & S. Livingston, Ltd., 16 and 17 Tevio Edinburgh 1, Scotland, 1954.

This monograph is an excellent summary of the work resection-reconstruction of the hip as pioneered and popula by Drs. Jean and Robert Judet. The authors explain the re for their calling this operative procedure "resection-recons tion" whereas in the U. S. the procedure has become more p larly known as the replacement prosthesis operation. In eight years this operation has been used, the authors have recently changed the angle in their replacement prosthesis. new type of prosthesis is more anatomically correct than t original one and should eliminate some of the criticisms have been leveled at their original prosthesis. The authors to be commended particularly on their method of grading shown in their easily read and easily understood tabulati This method of grading can be universally applied to all joint diseases and is particularly valuable in that it lends it to a very good preoperative and postoperative examination the patient. The figures must be kept in mind, but once examiner has familiarized himself with this method of grad it is easy to apply it. The photographs and reproduction roentgenograms throughout the book are excellent, and the planations that accompany them are clear. The authors' met of dealing with each etiological factor helps to show the va of their procedure in relation to a specific cause of disabil The authors are not afraid to discuss their poor as well as th good results, and it is often from the poor results that less are learned.

In pioneering such a work, the authors have deliberately u this operative procedure on many different types of hip jo diseases, and, as they conclude, their best results are obtai in patients with traumatic arthritis of the hip joint, with th next best in old, ununited fractures of the neck of the fem Although they obtain a good percentage of improvement osteoarthritis and fresh fractures, the poorest results are se in attempts to relieve the disability of dislocation of the h whether acquired or congenital. This would seem to be a natu observation, inasmuch as other attempts to relieve the di bility of dislocated hips have never been very successful. T authors continue to use an acrylic prosthesis, and apparen this stands up very well in their experience, but there is som doubt in the United States as to whether an acrylic or a metall prosthesis will ultimately prove best. The method of inserti of the prosthesis and the pressure points that the prosthe exerts on bone leave a question as to the mechanical efficien of such a prosthesis; however, the good results cited in th book should be not a deterrent but rather a stimulant to furth work on such a replacement prosthesis. The gathering of a lar series of statistics may show both the value and also the di advantages of such a procedure as well as ultimately determi the best type of material to be used. The authors are to b commended for their early work in this field, which certainl has given a great deal of impetus to reconstructive hip surgery.

QUERIES AND MINOR NOTES

GOUT

To the Editor:—*Please discuss the etiology, treatment, and prevention of gout. Two attacks involving my left first metatarsophalangeal joint within three months have me worried. The effect of colchicine on my sigmoid has been worse than the disease.* M.D., *Pennsylvania.*

Answer.—Gout is a disease of unknown cause. It is characterized by various manifestations, such as attacks of acute arthritis with complete remission after the early attacks, commonly chronic arthritis after repeated attacks of acute arthritis, hyperuricemia, subcutaneous tophi, uric acid renal calculi, nephritis, and a tendency to degenerative vascular disease. Individual patients may have only one or a few of these complications at any one time. Gout is not just the arthritis of gout but a more generalized disease. The condition is considered a disturbance of purine metabolism, but mainly it is concerned with faulty disposition of urates. Disturbances of uric acid are now considered results, rather than causes, of the disease. Recently, disturbances of the interrelated pituitary and adrenals resulting in secretion of corticosterone compounds, especially cortisone, have been considered as causing gout. This conception has little evidence to support it as yet. About 95% of patients who have typical gout are males. Improper diet may precipitate some attacks of acute gouty arthritis, but such diet does not necessarily cause the disease.

The specific histological features of gout consist of deposits of urates in and around the affected joints and, at times, in the kidneys. Osseous tophi, in the form of erosions in the margins of bones, appear consequent to replacement of bone by urates. Acute attacks, formation of tophi and hyperuricemia are not consistently related. Invasion of the cartilage with synovial pannus may lead finally to fibrous or bony ankylosis. The bursae become swollen, their walls thicken, and their sacs contain sodium urate. The metatarsophalangeal joint of the great toe is involved in about 70% of the initial attacks. Hyperuricemia usually is present, but in the early stages of the disease hyperuricemia often is absent. Distal joints, such as those of the feet, ankles, hands, and wrists, are more vulnerable than are the knees, elbows, shoulders, and hips. Degenerative vascular lesions may appear as complications in gout and may lead to renal, coronary, or cerebral disturbances. Intracardiac tophi have been reported, but they are rare. The recognition of gout is the most important point in its treatment. The current program of treatment usually consists of measures to be used between attacks and measures to be used during attacks.

Between attacks a uricosuric agent, such as 1 gm. of acetylsalicylic acid, is given three times a day for three to five consecutive days a week and for several weeks. To this is added sufficient soda to alkalize the urine on days when the acetylsalicylic acid is used; usually 4 gm. of sodium bicarbonate is given three times a day for this purpose. One to two grams of probenecid (Benemid) daily can be used in place of interrupted administration of salicylates. When probenecid is used soda is given at least five days a week. The diet should be low in purines. Conditions that might precipitate attacks should be avoided, such as trauma to joints and drinking of alcohol in some cases.

During attacks 1.3 mg. of colchicine is given initially. Then 0.65 mg. is given every two hours until diarrhea occurs, or, if the dose that will cause diarrhea has been established by experience, it is well to stop the giving of colchicine one tablet short of the diarrheal dose. In addition, a uricosuric agent and soda are administered; the patient is put at rest in bed. A purine-free diet is prescribed and hot or cold packs are kept around the joints continuously until the pain subsides.

The effect on the sigmoid, complained of by the physician who wrote the inquiry, presumably was excessive diarrhea. This may have been caused by taking colchicine too rapidly; many patients who take 0.65 mg. of colchicine every hour instead of every two hours get excessive diarrhea. Possibly the inquiring physician did not stop taking colchicine at the first sign of a gastrointestinal effect.

C-REACTIVE PROTEIN AS A TEST FOR INFLAMMATION

To the Editor:—*What is the status of the use of C-reactive protein as a test for inflammation?*

Sidney A. Cohen, M.D., Council Bluffs, Iowa.

Answer.—This test has been shown to be a sensitive indicator of the presence of an inflammatory process in the body. C-reactive protein (C.R.P.) can be readily demonstrated by means of a delicate precipitin reaction in the serum in the presence of an inflammatory condition. The test is not specifically diagnostic per se for any particular disease but has found its chief usefulness for the following purposes: 1. Determination of the C-reactive protein serves as a useful measure of the extent of the disease process in rheumatic fever and as a guide to therapy. It must be emphasized that this reaction is entirely unrelated to the antistreptolysin O titer, which is a specific response to group A hemolytic streptococcus infections. It is recommended that both determinations be done simultaneously in this condition until normal levels are reached. 2. Measuring the presence of and the approximate severity of an inflammatory condition. The test parallels to some extent the sedimentation rate, but it is considerably more delicate and not subject to as much "normal variation." 3. Following up the course of a disease process and measuring the therapeutic adequacy of corticotropin (ACTH) or cortisone, antibiotics, salicylates, or other agents. It has been shown to be of considerable value in determining when such therapy can be safely terminated. 4. Other diseases in which C-reactive protein determinations may have value are: subacute bacterial endocarditis, viral hepatitis, pneumococcus pneumonia, and a wide variety of other conditions. Studies are in progress concerning the relationship of the level of C-reactive protein in the blood in myocardial infarction, certain types of cancer, and other diseases.

Directions.—Approximately 2 cc. of fresh, unhemolyzed clotted blood is required. Because of the profound effect of specific therapy on this test, it is suggested that, if possible, specimens be drawn before treatment is started and at specific intervals thereafter, since, as in most other serologic tests, the pattern is more significant than any one determination. Reports are expressed in terms of plus, the maximum precipitate being 4+.

DIAGNOSIS OF ARTERIOSCLEROSIS

To the Editor:—*What clinical and laboratory tests will establish a diagnosis of arteriosclerosis or atherosclerosis? What tests are considered valid in testing an edible or injectable product to ascertain whether or not it has beneficial influence on the arteriosclerotic process in men?*

Morvyth McQueen-Williams, M.D., Englewood, N. J.

Answer.—The diagnosis of atherosclerosis cannot be established by any of the various laboratory tests available, if one excludes the demonstration of calcified atheromatous plaques by x-ray studies. All laboratory tests (total cholesterol; total cholesterol-phosphorus ratio; lipoprotein ultracentrifugal pattern; bound and unbound cholesterol; cholesterol solubility; albumin-alpha-protein-beta protein ratio; chylomicron-lipomicron-nephelographic curve) measuring absolute or relative values of various plasma components give direct or indirect information on different aspects of the colloidal plasmatic equilibrium,

---

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

i. e., the dispersion and stability of micellar cholesterol or lipoprotein aggregates. Their practical clinical significance is limited by the fact that they determine the relative tendency of a person toward atherosclerosis within a group of similarly reacting persons, rather than the actual existence of atherosclerosis. Some of these tests exhibit moreover inconsistencies or poor correlations in connection with sex, age, and associated diseases (hypertension, xanthomatosis, eunuchoidism). These shortcomings are attributable to the fact that atherosclerosis is the anatomic vascular reaction product common to colloidal plasmatic disturbances of various types that are elicited by a variety of different primary organic or metabolic diseases. The most generally recognized diseases among them are characterized by their association with hypercholesterolemia (diabetes mellitus, hypothyroidism, biliary obstruction, hyperadrenocorticism, essential xanthomatosis, lipoid nephrosis, and overnutrition). Because of the variable etiological background of atherosclerosis all therapeutic attempts made with edible and injectable agents (dietary restriction of calories, neutral fats and cholesterol, combined with abundant protein intake; plant sterols for the prevention of intestinal absorption of cholesterol; lipotropic factors, such as choline, lecithin, inositol, and pyridoxine; iodides; thyroid preparations; estrogens; heparin and heparin-like substances) have given similarly irregular therapeutic results as determined by the short-range and long-range effects on the outcome of the various plasma tests mentioned. The proper adjustment of the dietary caloric and lipid intake may be considered a requisite essential for the proper testing of the efficacy of any of the agents listed by laboratory procedures, of which the first three methods recorded above are the most commonly used and most reliable ones.

LYMPHEDEMA

To the Editor:—*A 22-year-old white woman has tremendous edema of both lower extremities up to the knees that resembles elephantiasis. There is marked induration, but no pitting and no ulceration or other gross skin changes. This condition started insidiously 10 years ago with swelling in the right ankle, apparently spontaneously without any illness whatsoever. The patient has always lived on the eastern Canadian seaboard. She has had no illnesses, and her family history is completely negative. She is otherwise in perfect physical health and has no pain or other complaints relative to her lower extremities but would like to know whether improvement is possible, mostly for cosmetic reasons. I delivered her of a normal infant without any complications over a year ago.*

E. G. Wermuth, M.D., London, Canada.

Answer.—The condition described seems to be that of idiopathic lymphedema (lymphedema praecox), which has been described (Allen, Barker, and Hines: Peripheral Vascular Diseases, Philadelphia, W. B. Saunders Company, 1946. Allen: *Arch. Int. Med.* **54**:606-624 [Oct.] 1934). It appears that the enlargement of the limbs at present is owing to both the accumulation of lymph in the extremities and fibrosis, which ordinarily is associated with this condition. In the early stages of this condition progressive enlargement can be prevented by adequate bandaging, but at the stage of the condition that the patient apparently has some plastic type of procedure may be performed to remove the hypertrophied tissue. Such an operative procedure is ordinarily followed by adequate bandaging.

FIBROSIS OF BLADDER NECK

To the Editor:—*Kindly give an opinion on operations for fibrosis of the bladder neck with the Thompson resectoscope method and the method with the hot snare.*

M.D., Iowa.

Answer.—Neither of the methods has any particular advantage over the other in transurethral resection for fibrosis of the bladder neck. The results with either method depend on the skill and the experience of the operator. The important consideration about the operation is the complete removal of any obstructing tissue. It is advisable to dilate the bladder neck with a Kollmann dilator at intervals over a period of several months after operation in order to guard against recontracture.

MONILIA INFECTION OF THE GUMS

To the Editor:—*Please advise me about treatment of yeast infection of gums. I have treated a patient one year with gentian violet, 1% solution. What other measures should I try?*

Maurice R. Williamson, M.D., Alton, Ill.

This inquiry was referred to three consultants whose respective replies follow—Ed.

Answer.—The age of the patient, the clinical findings, or the basis for the diagnosis of "yeast infection of the gums" are not stated in the query. It would be unusual to find the lesions of a monilial infection limited to the gingival tissues. It should be first ascertained that there are no sources of traumatic irritation that might predispose to a chronic gingivitis. These might include trauma to the gingival tissues resulting from calculus, inadequate dental restorations, malposed teeth, or occlusal overfunction. Improper oral hygiene habits may also be a predisposing cause. The above conditions, if present, should be checked and corrected by the patient's dentist. If the yeast infection still persists the topical application of 10% aqueous sodium caprylate solution may be effective.

Answer.—It is assumed that the case in reference is associated with Monilia. Monilia infection of the gums primarily is extremely rare. Mostly the oral moniliosis is associated with generalized moniliosis. In many cases of generalized moniliosis some debilitating preexisting disease is present. There is no recommended treatment of any value. Gentian violet appears to minimize secondary infection. In all cases of a chronic nature, a thorough search for systemic disease must be made.

Answer.—In view of the length of time for which the condition has been resistant to a form of treatment that usually brings about remission in one or two weeks, diagnostic tests should be repeated to determine whether this is a case of moniliasis. For the treatment of moniliasis, authorities in the field of oral medicine recommend topical application of 1% gentian violet solution three times a day after meals. The correspondent did not indicate whether this schedule was followed. Other forms of therapy that have been reported to be beneficial in some cases include x-ray and ultraviolet irradiation, a high vitamin diet reinforced with vitamin A up to 150,000 units daily, massive doses (100,000 units daily) of calciferol, and saturated solution of potassium iodide up to 20 drops thrice daily. "Shotgun" vitamin therapy, however, has no scientifically sound basis, and prolonged administration of large doses of vitamins A and D_2 is not without hazard from hypervitaminosis. Radiation should not be resorted to unless all other methods fail. If the lesions are sponged with a 10% solution of sodium sulfite, the fungus may more readily be scraped off; care should be taken to avoid bleeding during this procedure. Application of gentian violet solution may then be undertaken thrice daily after meals. Propionate or caprylate preparations are of value in the control of vaginal moniliasis, and they might be used in the present case on a trial basis before drastic measures are undertaken.

THROMBOCYTOPENIA DURING PREGNANCY

To the Editor:—*What precautions or prophylactic therapy should be followed to avoid untoward bleeding in a pregnancy complicated with idiopathic thrombocytopenia without a palpable spleen?*

Leon Zussman, M.D., New York.

This inquiry was referred to two consultants whose respective replies follow.—Ed.

Answer.—There are no especial precautions or prophylactic methods that should be followed other than routine efforts to improve the patient's general health and to maintain the red blood cell count and hemoglobin at high levels. For the latter purpose adequate amounts of iron and folic acid must be used. Although there is no clear indication for vitamin B_{12} and intrinsic liver factor, nevertheless a preparation containing these may be useful. Platelet counts should be followed carefully. So long as a disease is in a chronic phase, the outlook is good. The serious possibilities appear to be (1) exacerbation of the disease, with the appearance of bleeding from the gums, hemorrhage from the gastrointestinal tract, and hematuria; (2) postpartum hemorrhage; and (3) congenital purpura in the baby, which may be sufficiently severe to be fatal. Antepartum vaginal bleeding due to thrombocytopenic purpura is uncommon.

If there is acute exacerbation cortisone and corticotropin (ACTH) may be used as recommended for treatment of this disease. Should the indication arise, splenectomy may be performed irrespective of pregnancy; several such cases have been reported, with generally good results. Postpartum hemorrhage may be expected in about 20% of such cases, and accordingly one should be overvigilant and should be particularly rigid in employing the routine measures for the prevention of this complication. In addition, it is desirable that a compatible donor be immediately available when the patient goes into labor, in order that fresh blood may be given either by a direct transfusion or by a plastic bag technique.

Answer.—A platelet count and a prothrombin consumption test, i. e., serum prothrombin assay, should be done at monthly intervals throughout the pregnancy. This should be done at intervals of every two weeks during the last six weeks before the term. It is quite possible that the hormonal influence of the fetus may stabilize the mother throughout the pregnancy. If these two tests show deviation from normal, the patient should be watched for bleeding, and, if such occurs, particularly purpuric spots around the ankle, fresh, whole blood should be given in 250 to 500 mm. amounts and the result of this checked with platelet count and prothrombin consumption tests. If in the opinion of the attending physician cortisone or corticotropin (ACTH) is not contraindicated, administration of such drugs may tide the patient over a temporary period of difficulty.

ANTIDOTE TO POISONING WITH BARIUM SALTS

To the Editor:—*As an antidote to poisoning with barium salts, magnesium sulfate and sodium sulfate administered orally have been recommended. It is very hard to find recommended dosages with these remedies, particularly for children. Usually the exact amount of the poison ingested will not be known to the physician, so he would like to administer the maximum safe amount. Sodium sulfate is safer than magnesium sulfate but is less likely to be available, while the latter is present in many homes as Epsom salt. Most texts state that magnesium sulfate used orally is ordinarily harmless, but they qualify this by mentioning that in occasional persons with poor excretory systems or exceptionably rapid absorption, toxic effects of the magnesium ion appear. Is there any rule by which one can assign maximum safe oral dosages of these two salts for persons of various ages and sizes?*

M.D., North Carolina.

This inquiry was referred to two consultants whose respective replies follow.—Ed.

Answer.—Either magnesium sulfate or sodium sulfate can be used for gastric lavage when barium salts have been ingested. A 2 to 5% solution of either one should be used; the lavage should be maintained until the return is clear. It would then be advisable to leave in the stomach either magnesium or sodium sulfate in a dose compatible with the size and age of the patient. A 25% solution of magnesium sulfate may be used for this purpose. It is extremely rare to see any undesirable effects from magnesium sulfate taken orally. In a possible rare case in which some depression may result from the magnesium ion, the administration of calcium ion will rather quickly correct the condition.

Answer.—The first step in the treatment of barium poisoning is the administration of magnesium sulfate (Epsom salt) or of sodium sulfate (Glauber's salt) in ample quantities of water. This should be followed by repeated gastric lavage with small quantities of water. After the lavage is completed an amount of magnesium sulfate, corresponding to the cathartic dose, should be left in the stomach. Further treatment is symptomatic and supportive. Since magnesium sulfate is only absorbed slowly from the gastrointestinal tract to the extent of 30 to 40%, practically regardless of the dose, and rather promptly excreted through the kidneys unless the renal function is impaired, the possibility of toxic effects from its oral administration is quite remote. It is, therefore, not necessary to calculate the dose for children from that of adults according to one of the rules advocated for this purpose, especially since the administration of the sulfates has to be followed by gastric lavage and because children are comparatively tolerant to cathartics. The cathartic dose of magnesium sulfate for infants (excluding the first 3 months of life) is one knife tip, for children of 2 to 5 years of age one-half teaspoon, and for those between 6 and 12 years of age one teaspoon in one glass of water. In the treatment of barium poisoning these doses have to be considerably increased, especially since an overdose is much less harmful than an inadequate dose. There is no fixed rule according to which this dose can be calculated.

PRECAUTIONS AGAINST INFECTIONS IN HOSPITALS

To the Editor:—*In regard to the revision of procedures for "infectious precautions" in our hospital, I would like to ask:*

1. What disease list should undergo "infectious precautions"?

2. What procedures constitute infectious precautions?

Raymond F. Sheely, M.D., Pennsylvania.

Answer.—It is assumed that the inquiry refers to diseases transmitted by contact; hence, this list is submitted:

Communicable Diseases

Scarlet Fever
Diphtheria
Smallpox
Measles
Mumps
Chickenpox
Whooping cough
Pulmonary tuberculosis
Impetigo
Epidemic cerebral spinal meningitis
Pneumonia
Influenza
Poliomyelitis
Typhoid
Venereal diseases: gonorrhea, syphilis (stages 1 and 2)
Erysipelas
Puerperal septicemia

Precautions Usually Taken

1. Isolation or segregation of patients.
2. Isolation technique—gowns, masks, gloves, scrubbing of hands, etc.
3. Aseptic precautions in all services rendered the patient.
4. Boiling of all utensils and dishes after use by patient.
5. Destruction of all discharges from patient.
6. Scrubbing of hands after contact with patient.
7. After patient has left hospital:
    a. Scrubbing of walls with soap and water 7 to 8 ft. from floor.
    b. Washing of furniture with soap and water and antiseptic solution.
    c. Sterilization of mattress, pillow, and blankets by airing in sunlight.
    d. Airing of the room well for 24 hours before admission of another patient.

DIAGNOSIS OF PHEOCHROMOCYTOMA

To the Editor:—*Please discuss the value of urinary catechols in the diagnosis of pheochromocytoma.*

Jerome Robert Weinroth, M.D., New York.

Answer.—Estimations of urinary catechol are the most specific indirect means of demonstrating the presence of functioning pheochromocytoma. Crude bioassay may be done, consisting in the injection of a few cubic centimeters of the patient's urine into an anesthetized dog or cat, comparison of the pressor effect with that of arterenol (Nor-Adrenaline), and demonstration of the inhibition of the pressor effect of the urine by epinephrine-like drugs. The method of von Euler and Hellner (*Acta physiol. scandinav.* 22:161, 1951) is much more specific. In this test, urinary catechols are adsorbed on nascent aluminum hydroxide, and the eluted catechols are treated with iodine (von Euler and Hamberg: *Acta physiol. scandinav.* 19:74, 1949); iodine oxidizes epinephrine (Adrenalin) and arterenol to adrenochrome at different rates, so that the test permits estimation of total catechol, which includes hydroxytyramine, and of the ratio of epinephrine to arterenol. The [illegible] is no[illegible]y useful in urines of normal catechol content, but its sensitivity is such as to permit quite accurate estimations in the presence of the large amounts of catechol excreted in pheochromocytoma (von Euler and Engel: *Lancet* 259:387, 1950). Goldenberg and others (*Am. J. Med.* 16:310, 1954) surveyed chemical screening methods for this diagnosis, demonstrated the accuracy, described the technique of their method (fluorimetric analysis of the product of aluminum hydroxide adsorption from hydrolyzed urine), and showed that the large excretions found in pheochromocytoma contrast with the excretions found in normotension or in essential hypertension. The method described by Raab and Gigee (*Circulation* 9:592, 1954) is simpler and presumably less specific. No data are given on outputs in pheochromocytoma, although they may be presumed to be greatly increased. Practically, the adrenochrome method of von Euler and Hellner, especially when confirmed by approximate bioassays of the extracts, should be more convenient than the complicated fluorimetric technique for those interested in diagnosing pheochromocytoma who have little interest in determining low excretion rates.

ANTIBIOTICS AND SULFONAMIDES

To the Editor:—*I would appreciate answers to the following questions applying to the average adult whose illness is not excessively severe. 1. Is procaine penicillin in aqueous suspension (300,000 units) every other day adequate or should procaine penicillin in oil with aluminum monostearate be used if it is desired to give treatment only every other day? 2. Should either streptomycin or dihydrostreptomycin be used singly any more? In using the two combined is it better to give half the dose every 12 hours than the entire amount as one injection daily? 3. Is it as satisfactory to give chlortetracycline (Aureomycin), oxytetracycline (Terramycin), and tetracycline (Achromycin) four times a day or is it better to apportion these every six hours? 4. Is it considered proper to give the sulfonamides four times a day or should these be given every four hours?* *M.D., California.*

Answer.—1. Procaine penicillin, whether in water or in oil, with aluminum monostearate, given in a dosage of 300,000 units every other day is not an adequate dose for use in the average adult patient whose illness is not excessively severe. It is generally believed that, if indicated, the minimal dose of penicillin in continuing illnesses is about 600,000 units per day. 2. Current evidence indicates that equal mixtures of streptomycin and dihydrostreptomycin produce fewer toxic reactions than are seen when either antibiotic is used singly in comparable doses. It is impossible to answer whether it is ". . . better to give half the dose every 12 hours than the entire amount as one injection daily" unless one knows what disease the physician from California had in mind when he asked this question. 3. The tetracyclines may be given four times a day in illnesses of moderate severity, with doses at breakfast, lunch, dinner, and before bedtime rather than every six hours. For patients whose illnesses are more than moderately severe it is better to give the tetracyclines on a basis of every four hours around the clock. 4. When currently used sulfonamides are prescribed, these may be given on a basis of four times a day to persons who are moderately ill or less than moderately ill. In patients who are severely ill the dosage schedule should be at intervals of four hours around the clock.

ASPIRIN AND DIARRHEA

To the Editor:—*I was surprised to observe the statement in a scientific medical journal that aspirin is useful in the treatment of diarrhea. Is there any scientific evidence to that effect?* *Paul E. Adolph, M.D., Chicago.*

Answer.—As far as known, there is nothing in the pharmacological action of aspirin that might suggest it would be useful for diarrhea. Since diarrhea is always a symptom, it is conceivable that the mild analgesic action of aspirin might make certain patients more comfortable. It must be stated, however, that aspirin of itself is not therapeutically effective in combating diarrhea.

ACUTE CEREBRAL VASCULAR INSUFFICIENCY

To the Editor:—*A man in his 60's suffered from extended coronary thrombosis. After one week of complete constipation, one evening at about 10 p. m. he evacuated under great strain a large, compact, dried-out fecal mass. At 6 a. m. he awoke in distress, feeling drowsy, dizzy, vomiting violently, with severe dysarthria and fleeting paresthesias in the left side of the lips and the left thumb. Examination disclosed coarse nystagmus to the right side, severe dysarthria, paresis and gross ataxia in right arm and leg, past pointing to the right, and almost complete left-sided hemianopia. There were no pathological reflexes. The diagnosis was multiple necrotic foci at various levels of the brain caused by acute anemia of the brain. During the following weeks the cerebral picture cleared up, except that about two months later a slight ataxia in the right hand and the hemianopia persisted. Can it be assumed that the cerebral picture was caused by the sudden emptying of the abdominal cavity? Could such anemia of the brain in a man with normal blood pressure be due to some other cause?* *M.D., New York.*

Answer.—Symptoms in this case apparently developed as a result of acute cerebral vascular insufficiency (Putnam, Corday, Rothenberg, and Putnam: *A. M. A. Arch. Neurol. & Psychiat.* 69:551 [May] 1953). In a patient who already has severe vascular disease and has suffered a coronary thrombosis, straining followed by suddenly decreased abdominal pressure may cause relative shock resulting in deficiency of cerebral blood supply. This man must have had more than one cerebral lesion, inasmuch as the ataxia on the right and the hemianopia on the left could not well be explained by a single lesion. There was undoubtedly a drop in blood pressure immediately following evacuation. The patient then went to sleep, and the symptoms developed during sleep. It is not possible to postulate the interval of time that would elapse prior to the development of symptoms. Cerebral thrombosis without acute vascular insufficiency could likewise account for symptoms of this type, although hardly for the simultaneous development of more than one vascular lesion.

EPILEPSY

To the Editor:—*A man has been suffering since the age of 12 from a convulsive disorder, diagnosed as typical idiopathic epilepsy. All known relatives of both the man and his wife are clinically healthy. Longing for a baby and following medical advice, they had electroencephalograms taken. The electroencephalogram of the husband showed the typical changes of epilepsy, and that of his parents, wife, and only brother were normal. The couple has a 1-year-old healthy child. Recently the electroencephalogram of the husband's mother was reexamined and showed some abnormal dysrhythmic pattern. The wife is now in the beginning of the second pregnancy. What is the chance for the two children to get epilepsy, if (1) the electroencephalogram of all the examined relatives, including the husband's mother, is normal and (2) the electroencephalogram of the mother is really abnormal? Can the electroencephalogram of the first child give us definitive results in connection to his future health?* *M.D., Cyprus.*

Answer.—The significance of brain wave abnormalities varies with their degree. In identical twins with epilepsy the correlation for high voltage seizure discharges is high, but the correlation for changes in basic frequency is low. The important consideration in this family is the epilepsy of the husband. Whether his relatives display abnormal brain waves is relatively unimportant. On the basis of the husband's epilepsy, if he were an average epileptic, there would be perhaps one chance in 35 that any given child would have one or more seizures and one chance in 70 that it would have chronic epilepsy. A person with epilepsy may have a normal record, and a person whose record displays seizure discharges may be free of seizure, so that a recording of the first child would give only presumptive evidence regarding its future. Transmissible mental, physical, and personality traits of the parents are of more consequence than any transmitted tendency to seizures.

SCARLET FEVER CONTACTS

To the Editor:—*The Massachusetts Department of Health has prescribed that scarlet fever contacts under 18 be quarantined for "one week, or two days after the beginning of specific prophylactic treatment which must be continued for 3 additional days." What is adequate specific prophylactic treatment? Will sulfonamides suffice and, if so, at what dosage? What is the recommended dosage of penicillin, and by what route should it be administered? What would be the effect of one dose of 300,000 units of procaine penicillin given intramuscularly in prophylaxis?* *M.D., Massachusetts.*

Answer.—If cultures from nose and throat on blood agar plates proved to be negative for hemolytic streptococci, there should be no necessity for quarantining contacts. A Dick test might also be of value. There is no method of immunization against streptococcic infections. If the contacts had positive cultures for hemolytic streptococci any form of therapy invoked that was followed by elimination of streptococci must be considered adequate. At one time some authorities designated blood agar plate cultures that showed fewer than 10 colonies of hemolytic streptococci negative. Sulfonamides are not dependable as a prophylactic, and penicillin when given parenterally is not always effective for the purpose of eradicating organisms from the respiratory passages. Penicillin lozenges slowly dissolved in the mouth several times daily may be more beneficial in freeing or keeping the oral cavity free from streptococci. There are marked variations in the length of time that streptococci persist in the nose and throat whether with or without medication. At present, with the mild type of scarlet fever that prevails, the infectivity period seems to be unusually brief. If the contact harbored hemolytic streptococci, a dose of 300,000 units of procaine penicillin administered intramuscularly should be of distinct value in suppressing clinical scarlet fever.

SKIN IRRITATION FROM ADHESIVE TAPE

To the Editor:—*When a person suffers "burns" from the use of adhesive tape, what is the substance usually responsible and what substitute could be used?*

Gertrude M. Shults, M.D., Lakemont, N. Y.

Answer.—Adhesive tape or plaster causes skin irritations based on three principal mechanisms: (1) primary irritation; (2) occlusion, maceration, and infection; and (3) allergic sensitization. The first two are the common mechanisms; the third, although the basis of the most severe forms, is a rare occurrence affecting only a very small number of those exposed. It is common for the first two to be combined, and occasionally the allergic reaction is combined with the others. The chemicals usually to blame both for the irritation and for allergic sensitization are numerous, acting either in concert or separately. However, the most commonly responsible chemicals are those of the natural latex rubber mass that forms the principal ingredient of the sticky material in most tapes. Prominent among the causal agents are the pitches and resins, such as Burgundy pitch and terpenes. In addition, the man-made adjuvants sometimes have a part, e. g., monobenzoyl ester of hydroquinone or hexamethylenetetramine (Urotropin). The maceration and infection that occurs under adhesive may be somewhat like prickly heat and closely akin to other forms of sweat gland plugging. Unfortunately no good substitute and no satisfactory way of preventing irritations from adhesive tape have yet been discovered, despite many attempts. However, in a given person certain brands of adhesive may prove less irritating than others. When circumstances permit, a 24 to 48 hour pretrial by application of small patches of the available brands may enable the selection of the least irritating. Protective applications to the skin of tincture of benzoin and other agents have been recommended preceding the application of the tape. Adjuvants of antibiotics and antifungal agents might be of some use in reducing the infection. It is doubtful whether the occlusive effects and the irritant and allergenic action of adhesive tape can be regularly, wholly, or substantially reduced by any method known today. New experimental approaches including the possible preceding use of silicone-containing protectives might prove helpful.

PSYCHOTIC EPISODE WITH CARDIAC INFARCTION

To the Editor:—*In* The Journal, *June 26, 1954, page 876, there was a query about the cause of an acute psychotic episode precipitating three days after the disappearance of shock and fever in a patient with an acute anterior wall infarction. One consultant suggests the possibility of a cerebral thrombosis, and the second comments that the medication could not be responsible. It is interesting that both consultants and the referring physician appear to have limited their speculations to the "organic" aspects of the problem. However, it should be evident that a heart attack is not merely a problem in physiology but also a severe emotional trauma and threat to the person. In a general hospital one observes, not too rarely, psychoses precipitated by surgery or maiming accident, the psychosis representing in effect an extreme defense reaction against the emotional trauma effected by the mutilation. Usually these episodes occur in persons in whom the emotional concept of physical integrity constitutes a major defense against anxiety. Typically these persons are prone to try to minimize ordinary illness and are characterized by tension and compulsive character traits. Another group that may tend to become psychotic after a threat to body integrity is the group of borderline schizophrenics. Although psychosis following uncomplicated cardiac infarction is not common, I have observed such acute psychotic episodes twice. In each instance the psychosis was clearly not an organic one and could be related to the breakdown, by the threat of the cardiac episode, of a major defense against long-standing, severe, hidden anxiety.*

Mortimer F. Shapiro, M.D.
960 Park Ave., New York.

To the Editor:—*I wish to take issue with the statement of your consultant in* The Journal, *June 26, 1954, page 876, in which he claims that "psychotic symptoms as the result of an infarct of the heart" would usually indicate a concomitant occlusion of a cerebral artery. Two entirely different mechanisms are involved in the early and in the late (or rather delayed) cerebral manifestations of cardiac infarction, viz.: while the delayed hemiplegias, aphasias, etc., are usually due to embolisms arising in the heart or thrombosis in situ in miopragic cerebral arteries in bedridden patients, the pathogenesis of the early cerebral complications seems to be quite distinct in nature. Indeed, an editorial in* Lancet *(1:652, 1952) describes a hemiplegia without anatomic cause in a fatal case of myocardial infarction: the cerebral vessels were apparently normal. Thus, more light is thrown on the interesting suggestions of Bean, Cole, and Sugarman, etc., concerning the importance of underlying coronary pathology in several similar cases. What is more, a recent article by R. Valdivieso and others on this subject* (Bol. Soc. Chil. cardiol. 1:*41, 1953) calls attention to the frequency of this kind of cerebral manifestations and confirms my old belief in the fact that many a "cerebrovascular accident" is probably only an epiphenomenon in a coronary catastrophe—due not to embolism but to ischemia caused by the shock, just as an analogous phenomenon causes in the kidney what Fishberg brilliantly named prerenal uremia—with the obvious difference that the ultrasensitive brain tissue can hardly withstand an unduly prolonged anoxemic assault—thus transforming the "precerebral" disorder into a "cerebral" one unless the impact of the cardiac shock is promptly dealt with (the kidney, too, presents a similar, albeit more delayed, reaction). This distinction is not of a purely academic order nor of interest exclusively in the morgue. As Valdivieso points out, in some cases of apparently "primary" cerebral disaster, a routine electrocardiogram could show the "real cause" to be a coronary thrombosis; its prompt treatment could be of paramount importance in saving some victims of coronary disasters from a permanent* *hemiplegia, aphasia, or other sequelae of encephalomalacia. I wish to add, however, that the converse also happens: a severe cerebrovascular accident, through the mechanism of extreme stress or otherwise ("reflexly"?), may precipitate a coronary thrombosis in a miopragic vessel.*

Mardoqueo I. Salomon, M.D.
1450 Bryant Ave., Bronx 59, N. Y.

STERILIZATION FOLLOWING MASTECTOMY FOR CANCER

To the Editor:—*In* The Journal, *July 3, 1954, page 950, the question is posed whether oophorectomy is indicated in a woman of 32 who had a radical mastectomy for adenocarcinoma two weeks after discovering a lump in her breast. Metastatic carcinoma was discovered in one of 32 axillary lymph nodes. In the reply, surgical castration is categorically recommended. There is much to be said against oophorectomy under these conditions. Castration has its place in the management of mammary cancer, but its effect is palliative and not curative. The patient in question had an operable lesion that offers a reasonably good prospect of surgical cure. Warren and Tompkins* (Surg., Gynec. & Obst. *76:327, 1943) found that 50% of their patients with metastatic involvement of less than half the axillary lymph nodes were living and well 5 to 13 years after radical mastectomy. In a patient with metastasis to only one of 32 axillary nodes the prospects of cure should be something better than 50%. The objective of curative surgery is to restore a patient to health with no more than the necessary sacrifice of structure and function. If there were good evidence here, which there is not, that early oophorectomy would substantially increase likelihood of cure, then it should be performed. This patient, however, can expect no benefit from castration unless it is assumed that the mastectomy was a failure and residual carcinoma remains in her body. Even then any benefit would be transient, only palliative, and highly unpredictable. There is little evidence that the procedure prevents recurrence or is less effective if postponed until recurrence is demonstrable. It is thus difficult to understand why this young woman, who has an even chance of being free of cancer, should be rushed into a mutilating operation that she may never need. There is also a theoretical contraindication to oophorectomy. It is true that, in some premenopausal women with inoperable metastatic or recurrent carcinoma of the breast, castration produces dramatic palliation lasting for several months or even years. It is also true that the beneficial effect is limited in time and sooner or later is lost. Most physicians prefer to withhold such treatment until there is definite evidence of tumor so as not to exhaust the full palliative effect during a time when no palliation is required. This subject is sufficiently controversial to permit honest differences of opinion. However, in the light of the facts that are known, routine castration of young women with operable carcinoma of the breast does not seem justified.*

Charles E. Dunlap, M.D.
Tulane University of Louisiana
Department of Pathology
1430 Tulane Ave., New Orleans 12.

PREMATURE EJACULATION

To the Editor:—*The answer to the query on premature ejaculation in* The Journal, *July 24, 1954, page 1195, states that "the principal mechanism that sets off the phenomenon of ejaculatio praecox is hyperemia of the verumontanum." Schapiro (Premature Ejaculation: Review of 1,130 Cases,* J. Urol. 50:*374-379, 1943) reported that an estimated 7% showed evidence of inflammation of the verumontanum. I am convinced that the actual percentage is much less and that the proportion of cases of premature ejaculation to cases of "erosion of that area" would be extremely small. The vast majority of sufferers never have a cystoscopic examination. After seven years of clinical research in the diagnosis and treatment of premature ejaculation, I have concluded that there are two types of sufferers: (1) the sthenic, made up for the most part of quite virile persons, usually in the young or lower middle-aged group, who attain erection without difficulty, are eager and impatient, have supersensitiveness of the glans penis, and can be successfully treated with thorough application of 1 to 5% dibucaine (Nupercaine) hydrochloride ointment, and (2) the asthenic type, upper middle-aged or older, made up of men who have already failed repeatedly because they have much difficulty of erection and who need treatment for this form of impotence. In the latter group the anesthetic ointment is of no avail. Procaine hydrochloride, as suggested in the reply, would be worthless because this and similar anesthetics are not adapted for this purpose. In my experience no local anesthetic compares favorably with dibucaine as a treatment for premature ejaculation.*

When the B. N. A. was adopted in 1895, verumontanum was dropped. The correct anatomical name now is colliculus seminalis. By whatever name it is called, there are few instances in which it requires the topical application of silver nitrate.

G. Lombard Kelly, M.D.
Augusta, Ga.

ANGINA PECTORIS

To the Editor:—*The reply to the query on the use of pentaerythritol (Peritrate) tetranitrate in angina pectoris in* The Journal, *July 17, 1954, page 1122, stated that an occasional patient with angina pectoris may benefit clinically when the drug is given in doses of 10 to 20 mg. orally three or four times daily. Inasmuch as placebo medication may benefit an "occasional" patient, the conclusion to be drawn from the preceding statement is that pentaerythritol tetranitrate is a relatively inert drug. This false impression should be corrected. When objective evaluation of various vasodilator drugs was carried out by means of the Master two-step test, it was found that in two-thirds of the patients with coronary disease pentaerythritol tetranitrate prevented or favorably modified the anoxic changes seen in the control electrocardiograms recorded after exercise* (J. A. M. A. **153**:207 *[Sept. 19] 1953). Only tests with glyceryl trinitrate showed comparable exercise response. Moreover, of the agents tested, pentaerythritol tetranitrate appeared to be the most effective drug for prolonged prophylactic therapy in angina pectoris. Its favorable effect on the electrocardiographic response to measured exercise could be elicited as long as four to five hours after its administration. Such evidence, therefore, should not be dismissed lightly, since it is based not on the illusory, subjective criteria of "pain" and "nitroglycerine requirements" but on objective electrocardiographic measurements, which remain uninfluenced by personal bias.*

Henry I. Russek, M.D.
176 Hart Blvd., Staten Island, N. Y.

AFTER-IMAGES IN COLOR-BLIND PERSONS

To the Editor:—*In* The Journal *for June 12, 1954, page 705, Dr. Frank J. Pirone asks if there is general agreement on the cause of after-images and if the localization is in the eye or brain. The answer given is: "It has been demonstrated that after-images are retinal and not cortical." How, then, does one explain the following phenomenon? If one closes one eye and fixes the vision of the other on a black and white object for some 60 seconds, the negative after-image soon appears on opening the closed eye while closing the seeing eye. Here, there could be no interaction of rods and cones in the after-sensations; thus, this visual phenomenon could be cortical and not retinal. Not all persons making this visual test perceive an after-image, and some observe it in one eye and not the other. After-images are actually optical illusions, as they may be perceived even when the eyes are closed.*

R. de R. Barondes, M.D.
Veterans Administration
1380 Sepulveda Blvd., Los Angeles 25.

THE JOURNAL

of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 156, NO. 7 CHICAGO, ILLINOIS OCTOBER 16, 1954

COPYRIGHT, 1954, BY AMERICAN MEDICAL ASSOCIATION

TREATMENT OF TUBERCULOUS MENINGITIS WITH ISONICOTINIC ACID HYDRAZIDES

Emanuel Appelbaum, M.D.
and
Thomas A. Anderson, M.D., New York

Prior to the advent of chemotherapy, tuberculous meningitis was almost invariably fatal. The status of the disease has been altered considerably by the use of streptomycin administered intramuscularly and intraspinally. By means of this antibiotic regimen combined frequently with other tuberculostatic agents, remarkable results have been achieved that yield a high rate of remissions. After prolonged observation, however, the end-results were discouraging, since there were few long-term survivors. Smith[1] reported only six five-year survivors among 81 patients with meningeal tuberculosis treated with streptomycin. One of us (E. A.) observed a series of 120 patients with tuberculous meningitis who were treated with streptomycin among whom there were only six six-year survivors.

The recent discovery of the antituberculous activity of the isonicotinic acid hydrazides has stimulated many investigations on the value of these agents in the therapy of the various forms of pulmonary and extrapulmonary tuberculosis. This paper is based on the use of the isonicotinic acid hydrazides in a series of 10 consecutive cases of tuberculous meningitis, which were seen between April 10, 1952, and Feb. 4, 1953.

Clinical Aspects.—The patients presented the typical symptoms of meningitis, including changes in the sensorium, which ranged from apathy to delirium and coma. Individual patients showed considerable variation in the severity of the disease, but most of them appeared critically ill and one even moribund.

Table 1 shows the sex and age distribution of the patients and the duration of the meningeal involvement at the time the hydrazide therapy was started. It will be noted that, with the exception of cases 1 and 8, the duration of the illness ranged between one and two weeks. In the two exceptions hydrazide therapy was delayed for six weeks or longer.

Laboratory Data.—The pertinent laboratory findings in this series of cases are shown in table 2. It will be seen that the diagnosis was confirmed bacteriologically in all cases by positive spinal fluid cultures. In four instances the organisms were found also with the smear technique. Roentgenologic evidence of pulmonary tuberculosis was found in five cases. In one instance tubercle bacilli were isolated from the urine, and in one instance they were isolated from the gastric lavage. Hydrazide sensitivity tests were made on 12 strains obtained from eight of the patients. In 11 strains the sensitivity ranged from 0.2 to 20 mcg. of hydrazide per milliliter, and in one instance it was 200 mcg. per milliliter. The susceptibility to hydrazides of most of the tested strains is apparent.

TREATMENT

All the patients in this series were treated with the hydrazide drugs. Iproniazid was used in nine cases and isoniazid in one instance. The patient in case 1 had previously been treated for pulmonary tuberculosis with streptomycin and thiazolsulfone (Promizole). The use of these drugs was discontinued when the diagnosis of meningitis was made. In case 8 a diagnosis of an undetermined form of meningitis had been made in another institution where the patient was treated for one month with various antibiotics, including streptomycin administered intramuscularly, without apparent benefit. Streptomycin was used intramuscularly for the patient in case 9 for about two and one-half weeks during the early phase of the disease before the diagnosis was established.

The dosage of the hydrazide drugs varied from 4 to 10 mg. per kilogram of body weight per day. In most instances a dose of 8 mg. per kilogram was used. The medicament was given orally to eight patients, in three of whom the initial therapy was administered intramuscularly. The parenteral treatment only was used in two patients who were in a continuous state of stupor. Except for the fatal cases, the duration of the hydrazide treatment ranged between six and nine months. In the

---

From the Willard Parker Hospital and the Bureau of Laboratories, City of New York, Department of Health.

The iproniazid (*Marsilid*) was supplied by Hoffmann-LaRoche, Inc., Nutley, N. J.

[1] Smith, K. M.: Five-Year Follow-Up of 100 Cases of Miliary and Meningeal Tuberculosis Treated with Streptomycin, Am. J. M. Sc. **225**: 657 (June) 1953.

three patients who died therapy was continued for three and one-half days, two weeks, and five and one-half months, respectively.

RESULTS

Initial Improvement.—There was considerable variation in the time of the appearance of the initial changes indicative of clinical improvement that followed therapy with the hydrazide drugs. Remission of the fever was obtained in one to four weeks. Improvement in the mental state and recession of the meningeal signs were noted generally in two to six weeks. In one instance the nuchal rigidity persisted for four months. A state of well-being and gain in weight became manifest in one to three months. These changes were not noted in the patients who died within a short time after admission.

TABLE 1.—*Sex and Age of Patients and Duration of Illness at the Time Hydrazide Therapy Was Started*

Case	Sex	Age, Yr.	Duration of Meningitis at Start of Hydrazide Therapy
1	M	1½	Probably 7 weeks
2	M	2½	2 weeks
3	M	4	1 week
4	F	4	2 weeks
5	F	4	10 days
6	M	4½	6 days
7	M	5	1 week
8	F	10½	6 weeks
9	F	18	10 days
10	M	33	1 week

TABLE 2.—*Pertinent Laboratory Findings*

	Spinal Fluid									
Case	No. of Cells, per Cu. Mm.	Predominance of Cells	Protein, Mg. per 100 Cc.	Sugar, Mg. per 100 Cc.	Smear	Culture	Hydrazide Sensitivity, Mcg./Ml.	Roentgenogram of Lungs	Mendel's (Mantoux) Test	Other Tests
1	85	Lymphocytes	47	45	—	+	...	Consolidation, bronchogenic spread	Positive	Gastric lavage +
2	147	*Lymphocytes*	114	39	+	+	0.2 20.0	Calcification	*Positive*	....
3	Large number	Lymphocytes	68	31	—	+	...	Negative	*Positive*	....
4	309	Lymphocytes	176	20	—	+	20.0	Negative	Positive	....
5	190	Lymphocytes	130	21	+	+	0.2	Infiltration	Not done	....
6	240	Lymphocytes	162	56	+	+	2.0	Calcification	Positive	....
7	128	Lymphocytes	65	53	—	+	2.0 2.0 2.0 20.0	Negative	*Positive*	....
8	400	Polynuclear	87	44	—	+	200.0	Negative	Positive	....
9	185	Polynuclear	113	14	—	+	0.2	Negative	Positive	Urine positive by culture and guinea pig
10	290	*Lymphocytes*	146	30	+	+	20.0	Infiltration, cavitation	Negative	....

+ = positive for M. tuberculosis; — = negative for M. tuberculosis.

Clinical Course During Treatment.—After the initial favorable response, improvement usually progressed satisfactorily. In several of the cases, however, the clinical course was interrupted by occasional febrile episodes and certain adverse developments. For instance, the patient in case 1 experienced several attacks of asthmatic bronchitis accompanied by fever. The patients in cases 3, 6, and 10 suffered from impairment of vision. In the patient in case 7 hemiparesis developed during the fifth week and convulsions occurred later in the course. Case 9 was a difficult diagnostic problem during the early phase of the disease when the results of the spinal fluid culture were not yet available. For a while a diagnosis of brain abscess was entertained in this case, largely because of the presence of marked papilledema and the predominance of polymorphonuclear cells in the spinal fluid. During the third month this patient had a convulsive seizure. The clinical course in two of the fatal cases was short and very severe. In the third patient, temporary improvement was evident during the early phase of treatment, but the subsequent clinical course was one of progressive deterioration.

Spinal Fluid Changes During Treatment.—With the institution of hydrazide therapy, early disappearance of the organisms was noted in all but two of the cases. The exceptions were in the patients in cases 2 and 7, in which two or more spinal fluid cultures taken during the first two and two and one-half weeks, respectively, were positive for organisms. The return of the other spinal fluid findings to normal was generally delayed for many weeks or months. The pleocytosis persisted for periods of six weeks to six months, revealing many fluctuations and rising in some instances to nearly 1,000 cells per cubic millimeter. The elevated protein level persisted for similar range of time, occasionally showing marke quantitative increases. For instance, in the patient i case 5, the protein level rose to 520 mg. per 100 cc. and in the patient in case 6 to 640 mg. per 100 cc There were striking fluctuations in the sugar content the final return to normal occurred in one to thre months. It may also be of interest to note that in fou instances the sugar content was normal on admission but declined subsequent to the institution of hydrazide therapy.

Outcome.—In this series of 10 cases there were 7 recoveries and 3 deaths (table 3). As noted previously, at no time was there any evidence of response to the medication in two of the patients with fatal disease, one of whom was treated for less than four days. The survivors have been observed for periods ranging from 20 to 23 months, and they are all in good general physical condition and have normal mentality.

Complications.—As shown in table 3, the disease was complicated by blindness in three of the patients and by a slight hemiparesis in one instance. The impairment of vision was associated in each instance with disk changes that had the appearance of optic atrophy. In two instances (cases 3 and 6) the complication appeared within one month after the institution of hydrazide treatment, and in case 10 it was noted after two months of therapy. In the patient in case 3 it was possible to follow the development of the complication from bilateral papilledema to bilateral temporal pallor and then to diffuse pallor of the disks. Complication of the left eye preceded that of the right in the patient in case 10. It is gratifying to note that the optic nerve involvement cleared up completely in the patient in case 3 with return to normal vision and has been improving slowly in the patient in case 6, in whom the vision at present is still quite limited. These might have been instances of incomplete optic atrophy. With regard to the hemiparesis in the patient in case 7, function in the involved extremities has improved steadily and at present appears normal.

Toxic Reactions.—In this series none of the commoner toxic reactions such as constipation, vertigo, twitching, or hyperreflexia was noted. However, other significant untoward effects were observed in several cases. Auditory or visual hallucinations or a combination of these were encountered in four instances (cases 3, 7, 8, and 9). These reactions occurred as early as the second day and as late as the third month after institution of hydrazide therapy. In the patient in case 8 there were several episodes of this toxic manifestation, one of which was accompanied by fever. The hallucinations disappeared promptly in the patients in cases 8 and 9 when the drug was withdrawn. These patients were subsequently able to resume and continue use of the drug without any untoward effect. In the patients in cases 3 and 7 the hallucinations cleared up even though the use of hydrazides was continued. As noted previously, convulsive episodes occurred in the patients in cases 7 and 9. It is possible that these seizures were drug reactions. Except for transiently positive cephalin flocculation tests in five patients (cases 4, 7, 8, 9, and 10), the laboratory investigations showed little evidence of hydrazide toxicity.

Relapses.—Three of the patients in this series relapsed. In cases 7 and 8 the relapse occurred 4 months after the discontinuance of the hydrazide therapy, or 10 months after the initial attack, and in case 9 it occurred 5 months after cessation of treatment, or one year after the original attack. The hydrazide sensitivity of the tubercle bacillus isolated from the spinal fluid during the relapse was in each instance 0.2 mcg. per milliliter. It should be noted that the organisms cultured from the patient in case 8 during the relapse showed a much greater susceptibility to hydrazide than those isolated during the original attack.

The three patients who relapsed have been re-treated with iproniazid for about 10 months. The patient in case 7 received in addition *p*-aminosalicylic acid and a short course of streptomycin given intramuscularly. Shortly after the relapse, the patient in case 9 was subjected to a unilateral nephrectomy for renal tuberculosis. These three patients are at present in excellent condition, both physically and mentally.

COMMENT

It is clear from this study that the isonicotinic acid hydrazides were effective in the treatment of the majority of the cases of tuberculous meningitis. Admittedly, this series is too small and the periods of observation have not been long enough for final evaluation of these agents. Considering the satisfactory results obtained in this group of cases and the simplicity of the therapeutic regimen, it is apparent that the hydrazides are superior to streptomycin in the treatment of tuberculous meningitis, at least from a short-term point of view. In a recent study of the antituberculous activity of the hydrazides in miliary and meningeal tuberculosis, Clark and his collaborators[2] arrived at a similar conclusion.

With regard to some of the adverse effects noted in this group of cases, it is well to comment first on the deaths. As noted previously, the patient in case 5 was moribund on admission and was not expected to benefit from any medication. Failure of response in the patients in cases 2 and 10 is more difficult to explain. Possibly the presence of chronic caseous pulmonary tuberculosis in the patient in case 10 contributed to the death.

TABLE 3.—*Results of Hydrazide Therapy in Ten Cases of Tuberculous Meningitis*

Case	Outcome	Survival Period	Complications	Comment
1	Recovered	21 mo.	None	Residual pulmonary infiltration
2	Died	16 days	....	....
3	Recovered	22 mo.	Blindness	Normal vision now
4	Recovered	20 mo	None	....
5	Died	4 days	... .	*Moribund on admission*
6	Recovered	22 mo	Blindness	Limited vision now
7	Recovered	21 mo	Hemiparesis	Motor function normal now. Patient relapsed
8	Recovered	20 mo.	None	Relapsed
9	Recovered	23 mo.	None	Relapsed; nephrectomy done
10	Died	5½ mo.	Blindness	Temporary improvement in general condition

The occurrence of untoward effects in several of our patients was somewhat disturbing, although it appears to have had little, if any, bearing on the final outcome. Selikoff and his associates[3] and others[4] have emphasized that the principal toxic side-effects of hydrazide therapy occur in the central nervous system and that they are more apt to follow the use of iproniazid than isoniazid. It has also been noted that convulsions and psychoses are more frequent in patients with organic brain damage and in those with unstable personalities. In our series, the hallucinations appeared clearly related to the medication in at least two instances (cases 8 and 9), since this side-effect disappeared promptly when the drug was withdrawn. On the other hand, the occurrence of convulsive episodes in two of the patients could not with certainty be attributed to the hydrazide therapy, particularly since convulsions have also been encountered on occasion in cases of tuberculous meningitis under treatment with streptomycin. Furthermore, it appears from a recent report by Reilly and his collaborators[5] that iproniazid is probably not a convulsant in man, even in much larger dosage than that employed in our patients. The transient positive cephalin flocculation tests are at present difficult to appraise. In general, it may be noted that toxic effects following the use of hydrazides tend to subside spontaneously and rarely interfere with the therapeutic regimen.

---

[2] Clark, C M, and others: Isoniazid (Isonicotinic Acid Hydrazide) in the Treatment of Miliary and Meningeal Tuberculosis, Am Rev Tuberc. 66:391 (Oct) 1952

[3] Selikoff, I J., Robitzek, E H, and Ornstein, G. G.: Treatment of Pulmonary Tuberculosis with Hydrazide Derivatives of Isonicotinic Acid, J. A M A 150:973 (Nov. 8) 1952.

[4] Chemotherapy of Tuberculosis in Man Present Status, report to the Council on Pharmacy and Chemistry, J. A. M. A. 154:52 (Jan. 2) 1954

While the precise pathogenesis of the optic nerve damage that occurred in three of the patients has not been determined, it is very likely that this complication was the result of pressure by the tuberculous exudate and of some of the effects of the healing process. The fact that this complication has not been known to follow the long-term use of the hydrazides in other forms of tuberculosis is, in our opinion, a plausible reason for not implicating the drug. This view gains further support from the observation that in two of our patients the optic nerve involvement regressed completely or partially while the patients were still being given the medicament. It should be noted also that this complication has occurred on occasion in cases of tuberculous meningitis under treatment with streptomycin.

The high relapse rate in patients with tuberculous meningitis who are treated with streptomycin is well known. The occurrence of relapse in three of our patients is, therefore, not surprising; however, it is conceivable that a longer course of hydrazide therapy might have prevented these relapses. It is also of interest to note that the tubercle bacilli isolated during the relapse were in all three cases highly susceptible to hydrazide, and in one instance the organisms were much more sensitive to the drug than the original strain.

Many problems pertaining to hydrazide therapy in tuberculous meningitis undoubtedly require further study. These relate to the choice of drug, dosage, duration of treatment, and possible advantages of combining the hydrazides with other antituberculous agents. Methods of obviating drug toxicity and preventing complications and relapses certainly merit investigation. Finally, it is important to consider the advisability of continuing the hydrazide regimen on a home-care basis in patients who enter the phase of remission.

SUMMARY

Ten consecutive patients with tuberculous meningitis were treated with isonicotinic acid hydrazides. The diagnosis was confirmed in all cases by recovering the Mycobacterium tuberculosis from the spinal fluid. Roentgenologic evidence of pulmonary tuberculosis was found in five cases. In most instances a dose of 8 mg. per kilogram of body weight per day was used. Of the 10 patients, 7 recovered and 3 died. The survivors have been observed for periods ranging from 20 to 23 months, and they have been in good general physical condition and have normal mentality.

In this series several of the patients showed toxic side-effects referable to the central nervous system. Three of the cases were complicated by blindness, which cleared up completely in one patient and partially in another. Relapse occurred in three patients. These patients responded satisfactorily to re-treatment with hydrazides.

910 Park Ave. (21) (Dr. Appelbaum).

[5] Reilly, R. H., and others: Convulsant Effects of Isoniazid, J. A. M. A. **152**: 1317 (Aug. 1) 1953.

ASEPTIC MENINGITIS CAUSED BY COXSACKIE VIRUS WITH ISOLATION OF VIRUS FROM CEREBROSPINAL FLUID

Klaus Hummeler, M.D., Philadelphia, Daniel Kirk, M.D., Elwyn, Pa.
and
Mykola Ostapiak, Philadelphia

The numerous strains of Coxsackie viruses that have been isolated and described since Dalldorf and Sickles first directed attention to these agents[1] are grouped together mainly because they produce characteristic lesions in the suckling mouse or hamster. They were further segregated into two groups (A and B) according to the distinct pathological differences that they produce in the suckling mouse. Group A viruses produce typical lesions in the striated muscle, resembling Zenker's hyaline degeneration, and hardly any other recognizable pathological changes. The group B viruses, on the other hand, while producing only moderate muscle lesions also cause a characteristic encephalopathy and panniculitis. Furthermore, the group B viruses cause an extensive pancreatitis in adult mice. The viruses have a wide distribution in the world, and from the first isolation in 1948 considerable effort has been spent to relate the isolation of any of the Coxsackie viruses to a particular clinical syndrome in man. The difficulties in this respect have been pointed out very clearly in the extensive paper by Huebner and others.[2] It suffices here to state that there is strong evidence that the strains belonging to group A cause the clinical entity herpangina and that the group B strains are responsible for epidemic pleurodynia (Bornholm disease). Patients with involvement of the central nervous system in an infection with a Coxsackie virus have been reported on several times since the first description of the virus.[3] In all these patients, the virus was isolated from the feces or the oropharynx and a subsequent rise of antibodies against the isolated virus was shown. But this procedure has its fallacies, as indicated by Huebner and others.[2] Because of the ubiquity of the Coxsackie viruses, there is always the possibility that the isolated

---

From the Virus Diagnostic Laboratory, the Children's Hospital of Philadelphia (Department of Pediatrics, School of Medicine, University of Pennsylvania) and the Elwyn Training School, Elwyn, Pa.

[1] Dalldorf, G., and Sickles, G. M.: An Unidentified, Filtrable Agent Isolated from Feces of Children with Paralysis, Science **108**: 61 (July 16) 1948.

[2] Huebner, R. J, and others: The Importance of Coxsackie Viruses in Human Disease, Particularly Herpangina and Epidemic Pleurodynia, New England J. Med. **247**: 249 and 285 (Aug. 14 and 21) 1952.

virus caused a subclinical infection (with a subsequent rise of antibodies) without being involved in the apparent clinical syndrome. Only one report, by Gard, includes the recovery of a Coxsackie strain from the spinal fluid.[4]

Our report describes an outbreak of an infection with Coxsackie virus in an institution for mental defectives in which all 11 patients showed clinically an involvement of the central nervous system. From one patient in this series, a Coxsackie virus was isolated during the acute stage of illness from the spinal fluid, and serologic evidence is presented showing that this virus caused the aseptic meningitis.

CLINICAL OBSERVATIONS

The infections occurred during the period beginning June 27 and ending July 8, 1953, and involved 11 residents of the institution. The persons affected ranged in age from 14 to 26 years and, except for one, had been residents of the institution for from 1 to 16 years. One patient had been admitted one and one-half months before becoming ill. Each patient had enjoyed good health previous to the onset of this illness. Although they were all intellectually retarded, it was our opinion that their deficiencies were neither too severe nor too inclusive to preclude an accurate evaluation of the subjective evidence.

TABLE 1.—*Clinical Symptoms and Clinical Laboratory Findings*

		Clinical Signs of Meningeal Involvement			Spinal Fluid Data			Differential Count			
Case	Age of Patient	Stiff Neck	Kernig Sign	Brudzinski Sign	Increased Pressure	Protein, Qualitative (Pandy Test)	Cells, per Cu Mm	Lymphocytes, per Cu Mm	Polymorphonuclear Cells, per Cu Mm	Obtained Days After Onset	Results
1	16	++	++	+	–	++	22	18	4	5	Virus isolated
2	19	+–	++	––	+	+	63	33	30	3	Virus isolated
3	15	+	++	+	+	+	99	58	41	2	Virus isolated
4	16	+	+	+	+	+	22	13	9	2	Virus isolated
5	16	+	+	±	–	±	22	13	9	1	Virus isolated
6	16	+–	–+	+	–	+	44	24	20	6	Virus isolated
7	15	–	+	+	+	++	35	25	10	6	No virus isolated
8	14	++	+++	++	+	++	33	19	14	2	No virus isolated
9	15	++	–+	+	–	+	41	24	17	5	No specimen available
10	18	–	––	++	–	+	35	21	14	3	No specimen available
11	26	++	–++	–	+	+	70	39	31	2	No specimen available

All of the patients in this series showed closely comparable clinical characteristics. In all of the patients the onset was relatively sudden (12 to 24 hours) with symptoms of headache, stiff neck, backache, myalgia, low grade fever, and malaise. In addition, two complained of nausea and vomiting, two of diffuse chest pain of moderate severity, two of rhinitis, and two of sore throat. It is interesting that all of the patients showed clinical evidence of meningeal involvement and the presence of inflammatory signs in the cerebrospinal fluid indicative of a serous meningitis. Nuchal rigidity, spinal rigidity, Kernig sign, Brudzinski sign, and pleocytosis were seen in all cases. The cerebrospinal fluid cell counts ranged from 22 to 99 cells per cubic millimeter with a predominance of lymphocytes (table 1). The myalgia involved symmetrical large muscle groups; it was diffuse in three patients and focal in the remainder.

The temperature varied in the group of patients from 99.2 F to 100.8 F; the temperature was diphasic in eight patients and constant in the other three and gradually returned to normal. Fever was present for from 3 to 5 days in nine patients and for a period of 10 days in the other two. Symptoms existed for from 6 to 9 days in eight patients and from 10 to 15 days in three patients. There were two relapses after intervals of five and seven days of freedom from clinical evidence of the disease. Only four of the group appeared acutely ill, and all eventually made complete recoveries. None of the patients showed any muscle paralysis under the closest observation and scrutiny. A complete medical survey five months after recovery from the disease showed none of the patients to be suffering from any sequelae. Since a Coxsackie virus was isolated from the spinal fluid of one patient in the series, his clinical history follows in detail.

CASE 1.—A 16-year-old white boy was admitted to the hospital of the Elwyn Training School at 9 a. m. on July 8, 1953, after having complained to his supervisor that he had a "headache and ached all over." On questioning him at the time of admission, it was learned that he had been feeling perfectly well until 12 hours prior to hospitalization, at which time a mild generalized headache, sore throat, and persistent dull pain in his back and legs developed. These symptoms became somewhat more annoying during the night, but he was able to sleep, although fitfully. In the morning, he dressed and reported at 7 a. m. for breakfast as usual but discovered that he was unable to eat anything because of the sudden awareness of nausea and diffuse abdominal discomfort. About an hour later he noticed that his headache was more severe; his neck, back, and legs had become quite stiff, and he felt dizzy, unusually nervous, and excessively tired.

Examination on admission showed an alert, restless boy in obvious discomfort and projecting overt tension and anxiety. His temperature orally was 99.4 F, pulse rate 100 beats per minute, respirations 22 per minute, and blood pressure 120/70 mm. Hg The oropharynx was mildly inflamed, and there was slight adenopathy of the anterior cervical lymph nodes. Tenderness of the muscles of the neck, trunk, and legs was discernible

---

3 Curnen, E C; Shaw, E. W, and Melnick, J. L: Disease Resembling Nonparalytic Poliomyelitis Associated with a Virus Pathogenic for Infant Mice, J A M. A 141: 894 (Nov. 26) 1949 Von Magnus, H.: Isolering af tre virusstammer af Coxsackiegruppen fra patienter med meningeale symptomer. Ugesk laeger 111: 1451 (Dec 22) 1949. Melnick, J. L; Shaw, E W, and Curnen, E C.: Virus Isolated from Patients Diagnosed as Non-Paralytic Poliomyelitis or Aseptic Meningitis, Proc. Soc Exper. Biol & Med 71: 344 (July) 1949. Shaw, E. W.; Melnick, J. L, and Curnen, E C.: Infection of Laboratory Workers with Coxsackie Viruses, Ann Int Med. 33: 32 (July) 1950. Thelin, F., and Wirth, J.: La myalgie épidemique (maladie de Bornholm): Isolement d'un virus au cours d'une épidemie récente, Rev méd. Suisse Rom. 71: 44 (Jan. 1) 1951.

[4] Gard, S: "C-Virus" som orsak till "barnförlamning" utan pareser, Svenska lak.-sällsk. forhandl. 47: 285 (June) 1950.

on palpation. The chest was normal and the abdomen generally tender. A complete neurological examination showed bilaterally equal but exaggerated superficial and deep tendon reflexes. Kernig and Brudzinski signs were elicited. Spinal rigidity was easily noted by observing the patient's difficulties in attempting to sit up unassisted. He could only comply with the request after considerable effort and could accomplish the task only by upward flexion of the knees. The position could only be maintained by the use of the tripod supporting position. Attempts to flex his chin to his chest were met with a considerable amount of resistance indicative of moderate nuchal rigidity. Slight limitation in raising the leg was present bilaterally, and the hamstring muscles were tight. There was no evidence of muscle paralysis or sensory deficit.

TABLE 2.—*Results of Virus Isolation Attempts*

Case	Onset of Disease	Type of Specimen	Date of Collection	Days After Onset	Virus Isolation
1	7/8	Spinal fluid	7/13	5	+
		Feces	8/11	31	—
2	6/29	Throat swab	7/2	3	+
		Feces	7/2	3	—
		Spinal fluid	7/13	14	—
3	6/27	Throat swab	7/2	5	—
		Feces	7/2	5	+
4	6/27	Throat swab	7/2	5	—
		Feces	7/2	5	+
5	6/29	Throat swab	7/2	3	—
		Feces	7/2	3	+
6	7/2	Spinal fluid	7/13	11	—
		Feces	8/11	40	+
7	7/7	Spinal fluid	7/13	6	—
8	6/27	Throat swab	7/2	5	—
		Feces	7/2	5	—

TABLE 3.—*Serum Antibody Responses*

					Complement Fixation Test					Neutralization Test				
Case	Onset of Disease	Type of Specimen	Specimen Collected	Serum Collected	B_1 (Conn.)	B_2 (Ohio)	B_3 (Nancy)	B_4 (Powers)	Homologous Virus	B_1	B_2	B_3	B_4	Homologous Virus
1	7/8	Spinal fluid	7/13	7/29	<4	<4	<4	<4	4	<20	80	<20	<20	160
				8/11	<4	16	<4	<4	8	<20	100	<20	<20	160
2	6/29	Throat swab	7/2	7/2	<2	<2	<2	<2	2	<10	<10	<10	<10	< 20
				7/30	<2	<2	<2	<2	8	<10	40	<10	<10	40
3	6/27	Feces	7/2	7/2	8	16	8	8	4	<20	20	<20	<20	80
				7/20	16	128	16	8	16	20	320	<20	<20	320
4	6/27	Feces	6/27	7/2	<4	<4	<4	<4	4	<20	<20	<20	<20	40
				7/20	8	8	8	<4	4	<20	40	<20	<20	80
5	6/29	Feces	7/2	7/2	<4	<4	<4	<4	8	<20	120	<20	<20	160
6	7/2	Feces	8/11	8/11	8	16	4	8	4	<20	80	<20	<20	80

On the day of admission, a routine urinalysis showed normal results and a blood study showed 4,850,000 erythrocytes per cubic millimeter, 14.5 gm. per 100 cc. of hemoglobin, and a leukocyte count of 8,200 per cubic millimeter with a normal differential count. The sedimentation rate was 15 mm. in one hour. The Kline test for syphilis was negative, as was the Mendel (Mantoux) test. Lumbar puncture showed spinal fluid of normal appearance and under normal pressure with a cell count of 8 per cubic millimeter (5 lymphocytes, 3 polymorphonuclear cells) and a trace of globulin (Pandy test).

The status of the patient remained essentially the same through the first three days. On the fourth day, the temperature became normal and remained so thereafter. It had never been higher than 99.4 F. A second lumbar puncture was done on the fifth hospital day; it produced spinal fluid of normal appearance and under normal pressure with a cell count of 22 (18 lymphocytes, 4 polymorphonuclear cells) and a 2+ reaction for globulin (Pandy test). A Coxsackie virus was isolated from the second specimen of spinal fluid. On the seventh day the patient's condition began to improve rapidly, and he was discharged two days later completely recovered. Treatment had consisted of only symptomatic and supportive measures.

LABORATORY STUDIES

Virus Isolation.—Fecal specimens, throat swabs, and blood specimens were collected from 8 of the 11 patients. From four of the eight patients, spinal fluid specimens were also obtained for the purpose of virus isolation. These fluids were frozen in dry ice immediately after collection. Furthermore, rectal swabs and blood specimens were collected 45 days after the beginning of the outbreak from 20 persons who had been in close contact with the patients before and after the outbreak and who had shown no signs of illness.

The methods used for isolation and identification of the viruses have been described elsewhere.[5] The materials were inoculated intraperitoneally into one-day-old suckling mice, as mice this age are known to be most sensitive to infection with group B viruses. The symptoms of infection in these mice ranged from extreme weakness and ataxia to paralysis. Both skeletal muscle and brain tissue were used in suspension for further passages in mice. Each specimen, whether it yielded virus on initial passage or not, was inoculated again for a second passage series. The isolated viruses were identified and typed by complement fixation and neutralization tests using prototype hamster antiserums.

Serologic Tests.—Whenever available, blood specimens from the patients in the acute and convalescent stages of the illness were used in complement fixation and neutralization tests with prototype viruses and the homologous viruses from the patients to determine the development of antibodies.

Coxsackie virus was isolated from six of the eight patients studied. In four cases, a virus was recovered from the stool only and in one case each from a throat swab and a spinal fluid specimen only. Table 2 shows the isolation attempts from different specimens and the time relationship of these attempts to the onset of the disease. The viruses from 6 of the 20 contacts investigated were obtained in all instances from the fecal specimen. All isolated viruses were identified by neutralization tests as belonging to group B, type 2 (Ohio).

The isolation from the original spinal fluid was repeated four times, and each time the infection in baby mice followed the same pattern. The mice became weak and ataxic after about 10 days, and the incubation time shortened with subsequent serial passage of mouse material. The fifth passage was used as antigen in the serologic tests. The other three spinal fluid specimens were negative on repeated inoculation. They were taken 6, 11, and 14 days after onset, while the positive fluid from the patient reported on was obtained 5 days after onset.

---

[5] Beeman, E. A.; Huebner, R. J., and Cole, R. M.: Studies of Coxsackie Viruses: Laboratory Aspects of Group A Viruses, Am. J. Hyg. 55: 83 (Jan.) 1952. Kravis, L. P.; Hummeler, K.; Sigel, M. M., and Lecks, H. I.: Herpangina: Clinical and Laboratory Aspects of an Outbreak Caused by Group A Coxsackie Viruses, Pediatrics 11: 113 (Feb.) 1953.

Furthermore, all materials were inoculated into roller tube tissue cultures of strain HeLa to eliminate the possible infection with poliomyelitis virus. No poliomyelitis virus was isolated, but the stool suspension from the patient in case 4 and from one contact caused cytopathogenic effects. After two passages in tissue culture the supernatants of the tissue culture tubes were inoculated into baby mice, and in both cases the mice became paralyzed and a Coxsackie virus was recovered and typed as B_2 (Ohio). The two stool suspensions were negative when inoculated directly into baby mice.

The development of antibodies in the patients' blood against the homologous and prototype viruses is shown in table 3. In general, there is an antibody response only against the homologous virus and the prototype B_2 (Ohio). The cross reactions among the prototype strains in the complement fixation test, in contrast to the neutralization test, are well known and demonstrate again the necessity to measure antibodies against this group of Coxsackie viruses for diagnostic purposes only by means of the neutralization test.

The patient reported on in case 1 showed a titer of antibodies only against the homologous virus and the prototype B_2 (Ohio). The homologous virus was previously identified as type B_2. There was no difference in the neutralizing antibody titer of the paired serums. This is explained by the fact that the first serum was obtained 21 days after onset and the second serum 13 days later. Consequently, the first serum already showed an appreciable antibody level. There is very strong evidence, then, that the syndrome was caused by B_2 virus.

From the feces of 6 of the 20 contacts, a Coxsackie virus was recovered 45 days after the beginning of the outbreak. The virus strains were identical with the one that caused the disease in the patient. A single blood specimen was obtained at the time of the stool collection, and three of the six showed a marked elevation of antibody titer against B_2 prototype virus only.

It is of interest to note that none of the materials from the patients and the contacts yielded group A viruses. The simultaneous occurrence of group A and group B viruses in patients sick with pleurodynia is liable to confuse the picture considerably, as has been pointed out by Huebner and others.[6] Furthermore, no poliomyelitis viruses were recovered from the specimens of the patients or contacts.

COMMENT

The main feature of the described outbreak of an infection with Coxsackie virus group B is the involvement of the central nervous system in all 11 observed patients. The clinical symptoms were very similar, and the clinical and laboratory data did not contribute to an etiological diagnosis. The spinal fluids showed changes compatible with aseptic meningitis. Since the meningeal irritation was combined with dull muscle pains a tentative diagnosis of nonparalytic poliomyelitis was made in the first cases. The subsequent attempts to arrive at an etiological diagnosis by laboratory methods proved to be successful.

A Coxsackie virus was recovered during the acute stage of the illness from five of the eight patients studied. From one patient (case 6) an identical strain was isolated a month after onset, and in two patients the isolation attempts were unsuccessful. Etiologically, the isolation of a Coxsackie virus in the acute stage of illness from the spinal fluid of one patient (case 1) is the strongest evidence that the isolated Coxsackie virus was the causative agent of the observed syndrome.

The identification and the typing of the recovered strains showed that they all belonged to the same group and type of Coxsackie viruses, namely group B, type 2 (Ohio). From four patients paired serums were available. These patients showed an increase in antibody titer against the homologous and the prototype virus in the neutralization test. In two patients only a single serum was studied. In these two serums, an antibody titer against the homologous and prototype virus (Ohio) could be detected but one against the other members of group B could not. No other virus strain of the Coxsackie group could be isolated, and evidence of poliomyelitis was absent in the secretions from all patients. The findings in these cases were surprisingly uniform considering the many variations that may be encountered in an infection with Coxsackie viruses, but the evidence proves that the group B viruses, commonly associated with pleurodynia, can invade the central nervous system and cause a benign meningitis that is clinically indistinguishable from the serous meningitides caused by other infectious agents.

SUMMARY

Eleven patients with dominant signs of meningeal involvement and dull muscular pain were observed in an institution for mental defectives during a 12 day period. All showed spinal fluid changes compatible with aseptic meningitis. Coxsackie virus group B, type 2 (Ohio) was isolated from stool specimens of four patients and in one case each from a throat swab and a spinal fluid. Serologic evidence supports the conclusion that the disease was caused by this agent. No poliomyelitis or other Coxsackie viruses were isolated. Two strains of Coxsackie B_2 virus were isolated directly from stool suspensions in roller tube tissue cultures of strain HeLa producing cytopathogenic effects, while the same preparations failed to cause illness in suckling mice on first passage.

---

6. Huebner, R. J., and others: Epidemic Pleurodynia in Texas, New England J. Med. 248: 267 (Feb. 12) 1953.

Responsibility of Attending Physician.—The physician in charge of the case is responsible for treatment of the patient. Consequently, he may prescribe for the patient at any time and is privileged to vary the treatment outlined and agreed on at a consultation whenever, in his opinion, such a change is warranted. However, after such a change, it is best to call another consultation; then the physician in charge should state his reasons for departing from the course decided at the previous conference. When an emergency occurs during the absence of the physician in charge, a consultant may assume authority until the arrival of the physician in charge, but his authority should not extend further without the consent of the physician in charge.—Principles of Medical Ethics of the American Medical Association, chapter 5, section 6, June, 1954.

PROBLEM SITUATIONS IN THE TREATMENT OF PARALYSIS AGITANS

Lewis J. Doshay, M.D., Ph.D., New York

Most patients with paralysis agitans (Parkinsonism) are easy to treat. Those with tremor in an arm or leg, who continue at work or household duties, can be maintained comfortably by suitable medication and physiotherapy for as long as 10, 20, or 30 years, until serious progression of symptoms occurs.[1] There are patients, nevertheless, who present problems that severely tax the ingenuity and patience of the physician but can be managed with greater effectiveness if their problems are better understood. These problems will be discussed under three major headings: (1) problems related to the symptoms of paralysis agitans, (2) problems related to the personality of the patient, and (3) problems related to intercurrent ailments.

PROBLEMS RELATED TO THE SYMPTOMS OF PARALYSIS AGITANS

Rigidity.—Rigidity is generally not difficult to manage, since there are ample antispasmodics to counteract it.[2] However, neglect of treatment, or the natural progression of illness in some patients, leads to shortening or contracture of muscles, which brings deformity and severe disability. The most frequent area of involvement is at the ankle, where shortening of the tendo achillis produces toe walking and a forward thrust of the body, so that the gait becomes increasingly festinating and propulsive. Goose step walking exercises, if conducted regularly and energetically, can strengthen the quadriceps and prevent the progression of the talipes equinus gait and propulsion.[3] Passive stretching of the affected muscles is also helpful. Another frequent site of contracture is at the knee, for which suspension exercises prove beneficial. Still another is at the adductors of the thigh, for which exercises using a wide base in walking are employed.

Faulty Posture.—The greatest problem confronting the physician is the common tendency among patients with paralysis agitans for the shoulders to roll forward and the spine to flex, so that the head and trunk become bent almost to a right angle. It is important, therefore, to insure that every patient maintains an erect posture. This can usually be accomplished with the aid of strong antispasmodics, such as benztropine (Cogentin) methanesulfonate,[4] physiotherapy, spinal extension exercises, and the persistence of physician and patient. Exercises with an overhead pulley prove helpful in the program. In this case, prevention is of far greater importance than treatment, since if the spine and trunk are permitted to droop it is only a matter of time before the patient is unable to stand or walk without assistance, suffers many falls and, as a protection against injury, becomes confined to the chair or bed, with ultimate invalidism.

Major Tremor.—The major tremor is characterized by bilateral continuous shaking of the entire body and is accompanied by sweating, loss of weight and appetite, and inability to fall asleep or stay asleep. Major tremor[5] constitutes a grave challenge to therapy. While suitable treatment for rigidity is available through drugs, physiotherapy, and exercises, remedies for the control of severe tremor are lacking. For one thing, physiotherapy and exercises are of little, if any, value in the control of tremor. Secondly, the current medicinal armamentarium for tremor is not nearly as good as physicians would like it to be. Many patients cannot tolerate diphenhydramine (Benadryl) hydrochloride or scopolamine because of reactions of "dopiness," blurring of vision, or dryness of the mouth. Benztropine is helpful in a third of the cases, especially in relaxing the patient at night and enabling him to sleep. Tincture of stramonium proves beneficial in a few cases. Parsidol (10-[2-diethylamino-1-propyl]-phenothiazine) can control severe tremor but, in order to be effective, has to be employed in large doses, at which level disturbing side-reactions limit its use. For dosages, effects, and side-reactions of drugs, see table.

Akinesia.—Some patients are not rigid, or show but slight rigidity, yet can barely move. They seem to drag with difficulty from place to place, and every effort is preceded by a long pause. Cerebral stimulants, such as trihexyphenidyl (Artane) hydrochloride,[6] cycrimine (Pagitane) hydrochloride,[7] *d*-amphetamine (Dexedrine) sulfate, or amphetamine (Benzedrine) sulfate,[8] prove helpful to most patients, but others are sensitive to the large doses necessary to combat the symptoms. Moreover, among patients suffering from both akinesia and tremor, the latter is aggravated by the stimulants. Younger patients respond favorably to tonic hydrotherapy and Scotch douches, and these should be tried whenever feasible.

Frozen States.—Some patients complain of frequent attacks of "being glued to the ground." These attacks are brought on by sudden muscle spasms when a patient fears he is falling or has the urge to do something hurriedly that he feels powerless to perform. In this state of panic and frustration, the legs become frozen to the ground for several minutes. Sometimes, in the process of trying to free himself, the patient falls and is injured. Strong antispasmodics, such as benztropine, help to counteract muscle spasm and frozen states.

Poor Body Balance.—Poor body balance occurs among patients with advanced rigidity and akinesia. They

---

From the Parkinson Research Laboratory, Columbia-Presbyterian Medical Center.

Read before the Section on General Practice at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 24, 1954.

[1] Parkinsonism and Its Treatment, Doshay, L. J., editor, Philadelphia, J. B. Lippincott Company, 1954, chap. 4.

[2] Edwards, J. C.: The Drug Therapy of Parkinson Syndrome, M. Clin. North America **38**: 485, 1954.

[3] Snow, W. B.: Physiotherapy, in Parkinsonism and Its Treatment, Doshay, L. J., editor, Philadelphia, J. B. Lippincott Company, 1954, p. 103.

[4] Doshay, L. J.; Constable, K., and Fromer, S.: Preliminary Study of a New Antiparkinson Agent, Neurology **2**: 233, 1952.

[5] Doshay, L. J., and Zier, A.: Minor and Major Tremor: The Results in 544 Treated Cases, Neurology **3**: 360, 1953.

[6] Doshay, L. J.; Constable, K., and Zier, A.: Five Year Follow-Up Treatment with Trihexyphenidyl (Artane): Outcome in 411 Cases of Paralysis Agitans, J. A. M. A. **154**: 1334 (April 17) 1954.

[7] Magee, K. R., and De Jong, R. N.: Antispasmodic Compound 08958 in Treatment of Paralysis Agitans, J. A. M. A. **153**: 715 (Oct. 24) 1953.

[8] Shapiro, S. K.: Drug Therapy in Parkinsonism, Minnesota Med. **35**: 1031, 1952.

can stand and walk with caution, but if they move a trace off their line of gravity or if someone brushes against them they fall like a dead weight. These patients lack the power for speedy adjustments of the body. The situation can be remedied in most instances. First, the patient should be taught to employ a wide base in walking and standing. Second, he must be made to practice rapid shifting of the body, forward, backward, and to right and left. When possible, the aid of a physiotherapist should be enlisted. Strong antispasmodics and cerebral stimulants prove helpful.

Speech Problems.—Speech is never lost in paralysis agitans, except in the terminal days of the illness. Many patients, however, have a slurry monotone speech, while others talk in a whisper that is difficult to follow. These disorders are generally the result of faulty speech habits, poor breathing, and lethargy. Articulation can be improved in every patient through speech exercises that utilize the tongue and lips to greater advantage. Antispasmodics serve to loosen the facial musculature, and cerebral stimulants counteract lethargy.

Drugs Used in Treatment of Paralysis Agitans

Drug	Manufacturer	Dose	Effects and Comments
Cogentin	Sharp & Dohme	1 to 2 mg on retiring or twice a day	Currently most powerful oral antispasmodic Good against major tremor. Tolerated by young and old. Approved by Food and Drug Act, but not yet on market
Atropine solution, 0.5%	All drug houses	10 minims (0.6 ml) twice a day	Strong antispasmodic. Marked dryness and blurring of vision. To be used only in postencephalitic cases
Artane	Lederle	2 to 5 mg two or three times a day	Good antispasmodic Powerful cerebral stimulant Fair antitremor action Good in treating oculogyria Well tolerated
Pagitane	Lilly	1.25 or 2.5 mg twice a day	Good antispasmodic Powerful cerebral stimulant Fair antitremor action Good in treating oculogyria. Well tolerated
Parsidol	Warner Chilcott	50 mg three to eight times a day	Good antispasmodic. Excellent antitremor action. Some patients cannot tolerate mental and eye reactions
Rabellon (a proprietary tablet containing belladonna alkaloids)	*Sharp & Dohme*	*¼ to 1 tablet three times a day*	*Fair antispasmodic*
Thephorin	Hoffman-La Roche	25 mg three or four times a day	Produces feeling of well being. Mild relaxant action. No disturbing reactions
Scopolamine	All drug houses	0.3 to 0.6 mg two or three times a day	Best current drug for tremor. Disturbing side reactions limit its use
Benadryl	Parke, Davis	25 or 50 mg. two to six times a day	Good antitremor action Disturbing side reactions limit its use
Tincture of Stramonium	All drug houses	20 to 60 drops three times a day	Fair antitremor action. Minimal side reactions
Thorazine	Smith, Kline, & French	25 or 50 mg on retiring	Good short-acting hypnotic. Limited action against tremor
Dexedrine	Smith, Kline, & French	2.5 or 5 mg. twice a day	Best drug for akinesia, fatigue, and weakness Suitable for young and old

Emaciation.—Loss of weight is especially likely to occur among patients who are tense, excitable, and tremulous. These persons consume more calories than they ingest. A number of patients have responded favorably to vitamin B_{12} injections of 1,000 mcg. twice a week supplemented by thiamine hydrochloride, given orally or parenterally. Large extra feedings should be employed, and these are best administered after 9 p. m., since some patients resist taking extra food during the day lest it impair their appetite for the regular meal.

Insomnia.—Insomnia stems from different causes; therefore, treatment varies accordingly. Among some patients, insomnia is due to factors of worry, apprehension, or excitement. Large doses of phenobarbital and other barbiturates should be avoided in paralysis agitans, since they linger in the body and retard the patient throughout the succeeding day. Diphenhydramine and scopolamine are better suited to the purpose and leave less of a "hangover." A new drug, chlorpromazine (Thorazine)[9] (10-[γ-dimethylaminopropyl]-2-chlorophenothiazine hydrochloride), is available in 25 mg. tablets, and one or two such tablets on retiring brings sleep to many of these patients, without after-effect the following morning. Among other patients, insomnia is related to an inability to relax in bed, because of severe tremor. rigidity of spine and limbs, cramps in the muscles, or any combination of these. Benztropine has proved almost a specific for this. The atropine part of the synthetic relaxes the muscles and the diphenhydramine component serves to allay tremor and affords sleep.

Progression of Symptoms.—Most cases of paralysis agitans present a slowly developing course, interspaced by stationary phases lasting 5 to 10 years or more. There are patients, however, especially among the aged, who show rapid progression of symptoms, so that within two or three years the rigidity has spread to the spine, neck, and both sides of the body, and they can barely move. If at all possible, such patients should obtain the benefit of an intensive regimen of rehabilitation in a hospital. The change of environment from the patient's set ways of thinking and acting and the impact of several weeks of close supervision by the physician, adjustments in medication, and daily massage and exercise can prove far more beneficial in halting a rapidly downhill course than an occasional visit to the physician's office.

PROBLEMS RELATED TO PERSONALITY AND MENTAL STATE

Personality Problems.—There is no direct effect of paralysis agitans on the personality such as occurs in multiple sclerosis, in which euphoria appears as part of the illness. In paralysis agitans it is the original type of personality that shows through the illness, so that some patients are buoyant in spirit, others phlegmatic, and still others depressed.

The overzealous type of patient is endlessly in search of new remedies and a cure. He is forever scanning the newspapers and journals and seems to know more about some new drugs than physicians. It sometimes proves embarrassing. Even so, this type of patient is basically good natured and cooperative. Tact accomplishes more than blunt rejection of discoveries, which could lead the patient to believe that the physician is not quite up-to-date and seek help elsewhere. One can usually satisfy the zest for new drugs, without doing injury to the patient's buoyant spirit, by advising that such and such preparation requires time for exploration and testing. In most instances this is true, and it affords opportunity for the physician to obtain a full appraisal of the new product.

---

[9] Friend, D G., and Cummins, J. F.: A New Antiemetic Drug, J. A. M A. 153:480 (Oct 3) 1953.

The neurotic person is forever looking to the day of total disability. The illness is regarded in a hopeless light, and the patient more or less challenges the physician to prove he can help him. Thus, one woman 60 years of age rejects treatment, spends all her time bemoaning her fate, and is continually obsessed and depressed by the thought that she will some day be a helpless invalid and have to be carried about by the family. Another woman of similar age and even greater rigidity and tremor is spirited and active throughout the day, travels a great deal, and participates in various community functions. The obsessive neurotic can sometimes be reached by a successfully treated friend or neighbor, afflicted with the same or a worse ailment, and this approach should be utilized when possible. Most often these patients require psychotherapy and, occasionally, shock therapy.

The self-conscious type of patient has only a slight tremor and yet feels that the entire world is staring at his abnormality. One woman was distressed because her little girl was calling attention to her shaking arm and was beginning to imitate her. This type of person needs guidance and reassurance that the condition is not inherited and that no evil effects will come to the children. They do best when occupied; hence, stress should be laid on activities that will keep their attention off the tremor. One physician became depressed and was sent to a mental hospital, because he thought a lull in his practice was due to criticism of his abnormality by his patients. Another physician, similarly afflicted, carries himself with dignity, keeps his tremulous hand in his pocket when necessary, and conducts a prosperous pediatric practice.

The attention-seeking type of patient is so anxious to please the physician that every preparation or even a placebo works "wonderfully" with him. Unfortunately, this lasts but a week or two until he reports the loss of benefits and new remedies have to be sought. One is never quite certain with this type of patient whether a drug is actually doing its job. In fact, these patients are hardly concerned with their illness or remedies but want a constant audience and reassurance with regard to their many complaints. They are highly sensitive persons who can easily be offended; hence, special tact has to be employed. It is sometimes possible to reach an open understanding with them by pointing up the facts, after which better cooperation is achieved.

The vain and stubborn type of patient cannot accept the realities of his illness and persistently refuses to make necessary adjustments to it. An extreme instance is a patient of Dr. Brock,[10] who was a prosperous and successful executive with a flair for horses and hunting. He threatened that the day he could no longer mount a horse he would kill himself. He was adamant in his attitude and could not be reasoned with on this score. Although his illness was only of moderate proportions and he had the means for many years of comfortable living, when the the day came that he could not mount his horse, he shot himself.

The drug-sensitive type is oftenest found among elderly patients. These persons are more or less resigned to their physical handicaps but are proud of their intact mental faculties, which they zealously guard; therefore, any drug that renders them "dopey" or fogs their memory, even for a minute, is bitterly resented and they immediately discontinue its use. Utmost care has to be employed, therefore, in the selection of drugs for such patients, and it is far better to employ a "tame" drug, such as phenindamine (Thephorin),[11] than to chance the reactions of stronger acting compounds. If trihexyphenidyl is employed, a 2 mg. tablet could be broken into pieces and a fragment taken every two hours through the day; however, it must be realized that, since these are the patients who through long years have accumulated the severest grades of tremor, rigidity, contractures, and postural deformities, such minute and tame remedies have but a minimum impact on the symptoms. A wholly satisfactory solution to the problem is not available at this time.

Mental Problems.—Mental problems are not directly due to the illness but are reactions to medication, to environmental conditions, or to the disability. Reactions to medication are generally found in older patients; hence, excess dosage of drugs should be avoided with them. Even 5 mg. of trihexyphenidyl administered in a single dose has been known to cause confusion, restlessness, delirium, and visual and tactile hallucinations. Withdrawing the drug for a few days leads to the disappearance of the toxic psychosis. If 10 mg. of trihexyphenidyl a day is required in patients over 65 years of age, it is preferable to use 2.5 mg. four times daily rather than 5 mg. twice daily.

Reactions to environmental conditions are common. Tremor is a frequent cause of loss of employment, even more so than rigidity, and usually comes at a time of life when it is next to impossible for the patient to find or adapt himself to a new job. Even adjustment to idleness is difficult at this age, but, with the added stress of injured feelings, economic privation, home problems, and future uncertainties, frustration and depression ensue. Some patients isolate themselves because of self-consciousness and become melancholy. A few develop paranoid feelings that grow from a conviction that they have been let down by the world, or the family, or those whom they had befriended during better days. Again, any conflict of earlier years between a man and wife is sure to be accentuated at this stage, with relatives siding with the male patient against his wife. If monetary considerations enter, they are quick to see the woman neglecting the patient and hastening his demise, so that she may gain control of his funds. The helpless patient is in the midst of the family wrangles and suffers both ways. This and similar situations can be helped by guidance and psychotherapy, although in some instances not too well, so that shock therapy has to be employed. A change of environment sometimes proves beneficial. One man was retired on a pension and was unhappy with "time hanging on his hands." He moved to St. Petersburg, Fla., and found a happy adjustment, with activities of swimming, fishing and boating, as well as patients of his own type for companionship. Each case has to be treated on its individual merits and needs.

---

[10] Brock, S.: Psychotherapy, in Parkinsonism and Its Treatment, Doshay, L. J., editor, Philadelphia, J. B. Lippincott Company, 1954, p. 117.

[11] Effron, A. S., and Denker, P. G.: Clinical Evaluation of Certain Antihistaminic and Antispasmodic Drugs in Parkinson's Disease, J. A. M. A. **144**: 5 (Sept. 2) 1950.

Reactions to the disability vary. Patients with advanced disease who are disabled become depressed by their total state of helplessness, by their hopeless outlook toward the future, or by feelings that they are a burden to the family. These patients do constitute a strain upon the family. Their contractures and immobility cause aches and pains in the body, so that they make endless demands to be lifted out of the chair and to be put back into the chair, the arm to be stretched, the leg to be pulled forward, etc. Moreover, many of them dread to be left alone, even for a minute. With nurses scarce and too expensive for most families and convalescent homes not anxious for patients that require so much attention, the children are often forced to assume duties that are detrimental to their welfare. A daughter may have to leave her job and spend 24 hours of the day with her mother, to the exclusion of prospects for social life and marriage. Furthermore, because of their disabled state, the patients cannot be brought to the physician or clinic for treatment, so that they grow progressively worse. It should not be surprising that some patients, with nothing to look forward to, in a fit of depression attempt suicide and thereby are sent to a state hospital, where they do not belong. For patients of this type, special convalescent homes and a Parkinson foundation to initiate the establishment of such homes are needed.

PROBLEMS RELATING TO INTERCURRENT AILMENTS

Syphilis.—Two of every 100 patients with paralysis agitans have syphilis as well. The latter is not the cause of paralysis agitans but is coincidental to the sickness. The progress of the syphilitic condition, even without treatment, seems to be held in abeyance by paralysis agitans, for reasons as yet unclear.

Diabetes and Arthritis.—Three or four patients in 100 show a mild form of diabetes. Proper diet seems to suffice as treatment in most instances, but a few patients require insulin once a day. The diabetes tends to accentuate the arteriosclerotic process, so that these patients run a somewhat shorter course than patients without diabetes. Arthritis exists in about 5% of patients with paralysis agitans with pain in the joints, usually in the shoulder of the arm affected by rigidity. Roentgenograms almost invariably fail to reveal joint or bony changes other than those due to age and disuse. Often pain in a hip is attributed to arthritis, whereas the cause is actually postural and due to body strain on weakened muscles. Several treatments of massage and stretching exercises have cured shoulder pain that had been regarded as caused by bursitis, arthritis, or fibromyositis.

Fractures of Hip, Thigh, or Leg.—Fractures occur with such frequency among older patients, due to osteoporosis, poor balance, and falls occasioned by accident or sudden spasm of the muscles, that they constitute a grave challenge to therapy. Unoperated and unattended fractures lead to prolonged bed confinement, in the course of which the paralysis agitans progresses to severe proportions. Fractures must be attended to as early as possible, since even the oldest and most fragile-looking patients with paralysis agitans tolerate these operations surprisingly well.

Hypertension.—About 80% of patients with paralysis agitans have normal or low blood pressure. This includes all postencephalitic cases, as well as the older arteriosclerotic cases with slow onset of illness. Twenty per cent of persons with paralysis agitans show hypertension with blood pressure varying between 160 and 180 mm. Hg, and these are usually found among middle-aged patients with abrupt onset of illness. Even so, for reasons unknown, paralysis agitans tends to keep the hypertension within bounds, with or without hypertensive therapy. I have observed patients who prior to their illness had blood pressures of over 200 mm. Hg registering between 150 and 180 mm. Hg year in and year out, without benefit of special medication. While paralysis agitans does not cure hypertension, it seems to keep it within safe limits.

Cardiac Disease.—About 5% of patients with paralysis agitans have cardiac complications. It is nevertheless surprising that most of the patients live to 70 or more years of age and show no signs of strain on the heart. Even patients with a history of coronary disease or severe cardiac abnormalities prior to the onset of paralysis agitans fare quite well. Paralysis agitans seems to keep the cardiac illness under control, even among patients who have discontinued medication for the latter.

Cancer.—For reasons as yet unclear, cancer is phenomenally rare in paralysis agitans, despite the fact that the patients are in the age group of 45 to 75, when the expectancy of cancer in the general population is high. Only one proved instance of cancer has developed among the several thousand cases I have followed during the past 20 years, and this patient had a rectal cancer, without operation or metastases, for 5 years, until she died during a vascular episode.

Tuberculosis.—Not a single case of tuberculosis developed among the thousands of patients that I have watched and treated during the past two decades. Paralysis agitans seems to keep this under control, as it does cancer and untreated hypertensive and cardiac conditions. Interesting in this light is a well-authenticated case of a person with multiple sclerosis, in whom at 50 years of age paralysis agitans developed. During the succeeding 15 years signs of multiple sclerosis regressed to only a feeble Babinski sign in one foot. These situations warrant more study than they have thus far received.

Other Illnesses.—Ulcers are extremely rare in paralysis agitans and appear as a problem only among patients who have suffered from ulcers before paralysis agitans began. The postmortem studies of a 72-year-old man with rupture of an esophageal ulcer revealed that there had been a long history of ulcers before the onset of paralysis agitans. Glaucoma appears in about one case in several hundred, and two such cases followed the use of belladonna drops. In my experience this has been the only drug known to have caused glaucoma, although atropine could undoubtedly produce the complication if it were employed in older patients. Bed sores and infections thereof usually precede the terminal stage of illness, especially in cases of neglect. Special care, however, can prevent or cure such ulcers. Five years ago a woman 83 years of age with paralysis agitans had an extensive ulcer of the sacral region that was cured with bacitracin and close care; there has been no recurrence since.

COMMENT

So much has been said here about problems in paralysis agitans some of which can be remedied and others less easily so, that it could lead to a wrong conception of the illness. It is justifiable, therefore, to reiterate that these problem situations appear in only a small fraction of the vast number of persons with paralysis agitans. Actually, most patients are easy to treat, first because they expect so little and are appreciative of any help rendered, and, second, because they go through long stationary periods when it is relatively simple to maintain them in comfort with present armamentarium. Moreover, the general practitioner sees the patient from the start of the illness, when intensive therapy can help prevent many of the problems of later years. Furthermore, it should be understood that neurosurgery is not the solution to paralysis agitans and is, in fact, of extremely limited use. The much heralded anterior choroidal operation is hardly as successful as reports would have one believe. The postoperative course is stormy and unpredictable, and there have been more deaths from the operation than have come to attention.[12] The operation, if done at all, has to be limited to patients under 50 years of age and to advanced cases, when the desperate state of the patient justifies the risks involved. There is claim of over a million cases of paralysis agitans in this country, and the number is steadily growing. It must be obvious that the handful of selected cases temporarily benefited by surgery can hardly prove that surgery is the answer.

Thus, for the foreseeable future at least, the treatment of paralysis agitans will necessarily have to rest on chemotherapy, physiotherapy, and psychotherapy, and for the greatest part on the general practitioner. Furthermore, because the illness is chronic and progressive, it should be clear why treatment has to be a continuous process, rather than a haphazard affair. Patients with paralysis agitans should be taught that it is to their greatest interest and welfare to remain under regular medical supervision. Without it, they sooner or later become discouraged, discontinue treatment, and after several years of neglect appear disabled and a severe problem for therapy. If at all possible, every person with paralysis agitans should be seen at monthly intervals in order to check on their physical status, to evaluate the effects of medication, to control side-reactions, to advise on everyday personal and family problems, and to administer supportive psychotherapy that will keep them active and occupied.

Finally, attention has to be called to the fact that many patients believe that employment will weaken their already weakened and rigid muscles and hasten the onset of total disability or paralysis, all of which is contrary to the truth. Such patients should be advised that the entire illness is practically no more than rigidity of muscles, that there is never paralysis in this illness, and that the more they use the muscles the less chance there is for the development of shortened and contractured muscles that produce pain and deformity. They should be told that: Just as running water never freezes, so moving muscles never freeze, shorten, or ache. Every possible effort should be made to maintain patients with paralysis agitans as long as possible in a vocationally or functionally useful role.

710 W. 168th St. (32).

[12] Doshay, L. J.: Anterior Chorioidal Surgery and the Geriatric Parkinson, Geriatrics, to be published.

EXPERIENCE IN THE MANAGEMENT OF PATIENTS MEDICALLY ADDICTED TO NARCOTICS

Mark Rayport, M.D., C.M., Lexington, Ky.

While narcotic analgesics are of unquestioned value in the practice of medicine, the occurrence of narcotic addiction in the course of treatment for illness is acknowledgment of therapeutic failure. Indeed, prolonged, regular administration of narcotics by the physician to the point of addiction is a last resort in cases in which diagnostic procedures and specific methods of treatment have been exhausted, apparently without adequate effect, on a disease process associated with severe pain. The physician feels that to withhold narcotics from such patients would be unkind, sometimes humanely impossible. This is the basis for the belief, widely held by physicians and occasionally printed in textbooks,[1] that medically addicted patients should not be withdrawn from narcotics so long as the underlying illness has not been corrected. Furthermore, it is felt that the withdrawal process itself is a form of stress to which the sick person should not be subjected. It follows, then, that in the addicted patient suffering from a painful illness of chronic type the only therapeutic possibility is the life-long use of narcotics. However, because of the development of tolerance to the analgesic action of narcotics, eventually an impasse is reached in which the patient's daily narcotic requirements are high, yet the alleviation of pain is inadequate. In addition to being medically unsatisfactory, this situation is fraught with the possibility of economic and social disaster for the addicted patient and his family.

It is usually under such circumstances—at the end, it would seem, of their "therapeutic road," and often after some loss of both means and social status—that medically addicted patients are admitted to the U. S. Public Health

---

From the Clinical Division, U. S. Public Health Service Hospital (Senior Assistant Surgeon).

Dr. Rayport is now at Montreal Neurological Institute, McGill University.

[1] Nielsen, J. M.: A Textbook of Clinical Neurology, ed. 3, New York, Paul B. Hoeber, Inc., 1951, p. 675.

Service Hospital, Lexington, Ky., one of the two federal hospitals dedicated primarily to the treatment of narcotic addiction. On the wards of the Lexington hospital it has been noted repeatedly and with some surprise not only that these patients, admitted for the treatment of addiction while still suffering demonstrably from the underlying illness, could be withdrawn safely from narcotics but that if they remained for the entire minimum period of treatment of narcotic addiction (135 days) they came to lead comfortable, often active lives while receiving merely the specific medicaments, non-narcotic analgesics, or physiotherapy required by their underlying illness. To test these observations, the present study was carried out on a representative group of consecutively admitted male patients. As far as can be ascertained, no similar study has previously appeared in the literature.

DEFINITION OF MEDICAL ADDICTION

Kolb,[2] in 1925, in his classical study of personality types among narcotic addicts based on a group of 230 persons that was felt to be representative, at the time, of the addict population as a whole, found 9% to be "persons of normal nervous constitution to whom an opiate had been prescribed to the point of addiction to relieve the suffering of some prolonged physical condition." In applying Kolb's classification to the 1,036 patients admitted to the Lexington hospital during the fiscal year 1937, Pescor[3] found that 3.8% were normal persons who had become addicted to morphine "given legitimately for the alleviation of a painful or distressing disease." In 1944, Felix[4] reappraised the personality types among narcotic addicts and retained Kolb's category of "normal individuals accidentally addicted." Vogel, Isbell, and Chapman[5] amplified the description of this group as being composed of normal persons who had received narcotics over an extended period of time in the course of an illness and who, following relief of their ailments, had continued to use narcotic drugs.

The figures in these reports have often been taken to represent the incidence of narcotic addiction during medical treatment. Used in that manner, these figures must be low, since addiction to narcotics in the course of illness is certainly not limited to persons of normal personality structure. For the purposes of this investigation, a medical addict is defined as one who states that he first received narcotics from a physician, to the point of addiction, in the course of treatment for illness. At the Lexington hospital, medical addicts fall into three subgroups on the basis of the fate of their illness: 1. Narcotic addiction initiated during self-limited illness. Medical addicts in this group first received narcotics in the course of an illness from which they eventually recovered, such as lobar pneumonia or fracture of a long bone, but did not stop using narcotics. 2. Narcotic addiction associated with reversible illness. This group comprises medical addicts who, at the time of admission to the Lexington hospital, were still suffering from the illness during which they had been addicted, and who recovered from this illness, such as renal calculi, through appropriate treatment during their period of hospitalization. Only a few such medical addicts are seen at the Lexington hospital. 3. Narcotic addiction associated with irreversible illness. In this group are medical addicts who first received narcotics in the course of an illness that is commonly painful, for which narcotics are thus likely to have been given, and in which improvement may occur through treatment, but in which the pathological process is essentially irreversible, such as cardiovascular diseases, arthropathies, or causalgia. In these cases the clinical evidence was still present, so that the diagnosis could be established in the Lexington hospital.

METHOD

The method used in this survey grew out of the definitions just stated. Within one to two weeks after admission, all patients entering the Lexington hospital were interviewed by a member of the psychiatric social service section. Those male patients who answered affirmatively to ever having received narcotic drugs from a physician, either at the onset or at some time in the course of their addiction or during an illness, were further interviewed by the investigator. The investigator's interviews were conducted between the 90th and 110th hospital days and followed a standardized pattern. Data were first obtained regarding the patient's use of narcotics, a natural starting point for history-taking among addicted patients. This was followed by personal history data, past medical history, review of systems, history of illness during which the patient was addicted to narcotics, including treatment received prior to admission, status of that illness on admission to the Lexington hospital, and treatment received since admission. The patient was asked to evaluate his present state of health and physical comfort, his statement being recorded verbatim. As a means of verification, the interviewer then conservatively summarized in his own words what the patient had told him concerning the results of treatment. This rephrasing was adjusted if the patient did not acknowledge it as correct.

The patient's chart was then checked for supporting data in the initial history recorded by the admitting physician, in the physical examination, and in the laboratory reports. Opinions as to the patient's hospital course in the physicians', nurses', and psychiatric aides' notes were reviewed along with weight charts whenever available. Weight gain is a useful indicator in view of the loss of weight that usually accompanies prolonged addiction and because the addicted patient regards weight gain as a sign of returning health. Another criterion of recovery after withdrawal from narcotics is the subsidence of postwithdrawal insomnia. All patients admitted to the Lexington hospital are seen by a member of the psychiatric staff who, during his interview, obtains an independent addiction history. The record of this interview was consulted in each case to corroborate statements received from the patient in connection with the survey.

Any patient, tentatively diagnosed as a medical addict, in whose histories any significant contradiction was encountered was removed from the group of medical addicts. This occurred in seven cases. Also excluded were those medical addicts who did not remain for the entire minimum period of treatment of narcotic addiction.

---

[2] Kolb, L.: Types and Characteristics of Drug Addicts, Ment. Hyg. 9: 300, 1925.

[3] Pescor, M. J.: The Kolb Classification of Drug Addicts, Pub. Health Rep., supp. 155, United States Public Health Service, Division of Sanitary Reports and Statistics, 1939.

[4] Felix, R. H.: Appraisal of Personality Types of the Addict, Am. J. Psychiat. **100**: 462, 1944.

[5] Vogel, V. H.; Isbell, H., and Chapman, K. W.: Present Status of Narcotic Addiction, with Particular Reference to Medical Indications and Comparative Addiction Liability of Newer and Older Analgesic Drugs, J. A. M. A. **138**: 1019 (Dec. 4) 1948.

CLINICAL MATERIAL AND RESULTS

Patients at the Lexington hospital fall into three legal categories: volunteers, who may sign out at any time; probationers from local courts, who would be taken to local jails for the remainder of their sentences if they left the hospital prior to the completion of their treatment for narcotic addiction; and federal prisoners, who may not leave until the expiration of their time.

During 1952, a total of 4,114 patients were admitted to the Lexington hospital. An arbitrary number of 1,500 consecutive admissions occurring between Aug. 8 and Dec. 9, 1952, were included in this study. They represented 36.4% of all admissions for that year. The composition of this sample with respect to sex and race is compared with that of the whole group in table 1. It is evident that the sample is representative of the total.

Because of differences in cultural and addiction patterns and in their treatment settings within the Lexington hospital, women, Orientals, informers, psychotics, and patients with a language barrier were excluded. This report, therefore, is based on 1,065 consecutively admitted male addicts, of whom 602 (56.5%) were volunteers, 282 (26.5%) probationers, and 181 (17%) federal prisoners. Admission of white patients numbered 694 (65.2%) and of Negroes, 371 (34.8%). Negro patients made up 32.1% of volunteers, 17.4% of probationers, and 71.3% of federal prisoners. Statistical characteristics of the male addict population are presented in table 2. These data were obtained in each legal category by abstracting the chart of every fourth consecutive patient not classified as a medical addict.

TABLE 1.—*Comparison of Composition of All Admissions During 1952 with Sample of 1,500 Consecutive Admissions*

	Race						Totals by Sex	
	White		Negro		Others			
	All	Sample	All	Sample	All	Sample	All	Sample
Males								
%	52	50.5	23.1	25	3.8	3.3	78.9	78.9
No.	2,139	758	950	375	157	50	3,216	1,183
Females								
%	...	...	...	...	...	...	21.1	21.1
No.	...	...	...	...	...	...	868	317
Total no. of patients							4,114	1,500

Because of readmissions, the figure of 1,065 admissions represents 1,020 persons, 656 white and 364 Negro. Of this number, 182 left the hospital prior to being screened by the psychiatric social service, leaving 836 patients, 508 white and 330 Negro, whose statements regarding the manner of onset of addiction had been obtained. Among these patients, 277 (33.1%) had at some time received narcotics from a physician. Forty-seven of this number left the hospital prior to completion of treatment. The remaining 230 patients were investigated according to the procedure described. Among them, 141 were recognized as medical addicts, 137 being white and 4 Negro, giving an incidence of 27% among white patients and 1.2% among Negro patients. If it were assumed that there were no medical addicts among the 182 who left the hospital prior to being screened, the respective incidences of medical addiction would be no less than 20.9% among whites and 1.1% among Negroes. However, a review at the rate of one in four of the charts of these 182 patients gave evidence that such an assumption was unnecessary.

The 141 medical addicts comprised 40 volunteers (28.4%), 90 probationers (65.8%), and 11 federal prisoners (7.8%). When compared with the composition of the male addict population, the medical addict group had half the incidence of volunteers and prisoners, twice the percentage of probationers, and one-twelfth the percentage of Negroes. On admission, medical addicts formed 6.6% of volunteers, 32% of probationers, and 6% of federal prisoners. However, at the time of discharge medical addicts made up 31%, 36%, and 6%, respectively, of the volunteers, probationers, and prisoners who had remained for the entire minimum period of treatment for narcotic addiction.

TABLE 2.—*Averages of Data by Race and Status on Male Nonmedical Addicts*

	Legal Status						All Nonmedical Addicts	
	Volunteers		Probationers		Prisoners			
	White	Negro	White	Negro	White	Negro	White	Negro
Age on admission, yr.	40	25	41	26	36	26	39.7	25.7
Age at onset of addiction, yr.	29	20	26	22	24	21	27.2	20.9
Duration of addiction, yr.	11	5	15	4	12	5	12	4.5
No. of admissions	3.4	1.3	5	2.3	2.3	1.4	3.6	1.6

Among all male addicts, addiction to synthetic narcotics such as meperidine (Demerol) and methadone was entirely limited to patients receiving narcotics from physicians.

Statistical characteristics of medically addicted patients are given in table 3. The probationers had 20% more previous admissions than the volunteers. Most probationers are former volunteer patients who, after signing out against medical advice during an earlier admission, reenter the hospital for an entire period of treatment for drug addiction. A brief description of each of the three groups of medical addicts follows.

TABLE 3.—*Data on White Male Medical Addicts*

	Group 1		Group 3		Average of All Medical Addicts
	Average	Range	Average	Range	
Age on admission, yr.	49	31-69	45	23-59	47.4
Age at onset of addiction, yr.	31	18-54	36	20-66	32.9
Duration of addiction, yr.	18	1-35	10	0.5-33	14.8
No. of admissions	5.5	1-20	3.6	1-12	4.9

Group 1.—Medical addicts whose addiction had begun during self-limited illness numbered 89 (63.1%). They were white men except for one Negro. Their mean age on admission, 49 years, was higher than that of any other addict group. Even though they averaged four years older at the beginning of addiction than nonmedical addicts, they had the longest mean duration of addiction (18 years). In 25% of the group, narcotic addiction had begun during treatment for traumas of different severity.

Another 30% had been chronic alcoholics. They had come to know the effects of morphine when it was given to them by a physician for alcoholic "shakes." Each patient averred that the conversion to opiates had been complete and well-nigh instantaneous; they had used no alcohol since. On admission, most of these patients showed only such deterioration of health as is incident to maintained addiction.[6] Their clinical management was identical with that of nonmedical narcotic addicts. However, in 21 of their number (23.6%), through advancing years, chronic painful illnesses had developed, for which they were continuing to receive opiates from a physician. Clinical investigation according to the method described confirmed that these patients fulfilled the criteria of medical addiction associated with irreversible illness (group 3). Despite their prolonged addiction history, the hospital course of these patients was identical with that of group 3 medical addicts, which will be specifically described below.

Group 2.—Medical addicts with reversible illnesses were represented by only two patients. Both were white and aged 25. One suffered from renal calculi and underwent uneventful lithotomy. There was no recurrence of symptoms during a year of observation in the Lexington hospital. The other patient had had recurrent left-sided migraine headaches for seven years. His treatment had included ergot preparations, psychotherapy, histamine desensitization, cobra venom, and different anodynes. Eventually he had become addicted to meperidine. At the Lexington hospital, earnest attempts to relieve pain by non-narcotic medical means were unsuccessful, with one exception. Procaine infiltration of the frontal branch of the left superficial temporal artery produced instantaneous, though temporary, relief of pain. This could not be duplicated by infiltration with isotonic sodium chloride solution. The frontal branch of the left superficial temporal artery was excised. The vessel was found to be normal on subsequent microscopic examination. Migraine headaches were relieved and did not return postoperatively during a period of three months.

Group 3.—Medical addicts with essentially irreversible illnesses form the most important group from the standpoint of this report. These patients numbered 50 (34.7%), 25 being admitted in each half of the 1,500 admissions. Their mean age on entry was 45 years, with a range of 23 to 59. Addiction had begun at 36, nearly a decade later than in the nonmedical addict. The mean duration of addiction had been 10 years, which was less than in the nonmedical addict. Three of the group were Negroes, in whom medical addiction had begun earlier and had lasted longer.

One may therefore discern a "syndrome" of the chronically ill medical addict in which the typical patient is a man of middle age, with late onset of addiction (fourth decade), demonstrably ill, and addicted to morphine or to a synthetic narcotic drug. Among these patients, a diagnosis of cardiovascular disease was established in nine. Thirteen had gastrointestinal disease, 5 pulmonary disease, 11 bone or joint disease, and 12 neurological illnesses. Withdrawal from narcotics was accomplished gradually by the methadone substitution method.[7] The period of the withdrawal was determined individually for each patient, depending on his physical condition and on the dosage during addiction. In this series, the duration of withdrawal ranged from 1 to 15 days. The medical and addiction histories, diagnoses, diagnostic evidence, and treatment are summarized in table 4. Due to limitation of space, only 40 representative cases are listed. In that table the results of 90 to 110 days of treatment are presented in terms of the management of clinical exacerbations, work assignment carried out in the hospital, ability to sleep spontaneously, and weight gain (whenever available). The patient's own statement is quoted in the last columns of the table. It is followed by a letter symbol in brackets that summarizes the combined opinions of patients and staff as to the patient's general condition after 90 to 110 days of hospital treatment. (A) stands for a very good result, (B) for a good one, (C) for a fair one, and (D) for no improvement. On the basis of such coding, the following numerical summary is possible: (A) was applied in 22 cases, (B) in 20, (C) in 7, and (D) in 1.

Results in Group 3.—Of 50 patients of diverse personality structure, admitted for the treatment of narcotic addiction while still suffering from a persistent and painful illness during which they had been addicted, all were withdrawn safely from narcotics and 42 (84%) stated that they felt well or very well while receiving merely the specific medicaments, non-narcotic analgesics, and physiotherapy required by their underlying illness. Many were able to hold a work assignment in the hospital. A similar result was observed among the 21 older medical addicts in group 1 who were mentioned earlier as also fulfilling the criteria for group 3.

COMMENT

Environment.—The setting in which these results were obtained is relevant. The Lexington hospital is a closed institution in which access to contraband narcotics is prevented. It is staffed by physicians, other hospital personnel, and work supervisors who combine in the care of the addicted patient during an initial and brief clinical period of withdrawal from narcotics, which is followed by a longer rehabilitative period. Daily life in the Lexington hospital may be compared with that of a partially self-sufficient community in which each member is assigned work according to his abilities. Bed, board, recreation facilities, and some entertainment are provided, and regular hours are kept. The medical, surgical, and diagnostic facilities of a general hospital are available, including physiotherapy. It is understood that narcotics are not prescribed in the absence of definite medical or surgical indications. However, when these exist (as in acute myocardial infarction or massive pulmonary hemorrhage or preoperatively), narcotics are administered in conformity with established medical practice in cases of similar nature. The staff adheres to a stated policy in determining the time of discharge for each patient. During this survey, the minimum period of treat-

---

[6] Isbell, H., and White, W. M.: Clinical Characteristics of Addictions, Am. J. Med. 14:558, 1953.

[7] Wikler, A.: Drug Addiction, in Tice, F.: Practice of Medicine, Hagerstown, Md., W. F. Prior Company, Inc., 1953, vol. 8, p. 17. Isbell, H., and others: Liability of Addiction to 6-Dimethylamino-4-4-diphenyl-3-heptanone (Methadon, "Amidone" or "10820") in Man, Arch. Int. Med. 82:362 (Oct.) 1948.

TABLE 4.—*Case Histories of Medical Addicts with Essentially Irreversible Painful Illness (Group 3)*

			Medical Addiction History				Abstract of Hospital Record				Objective Results			Subjective Results	
Case	Age, Yr.	Race	Illness During Which Addicted	Treatment Prior to Admission	Years of Illness	Years of Addiction	Diagnosis	Diagnostic Evidence	Treatment	Days of Withdrawal	Management of Exacerbations	Work Assignment Held	Weight Gain, Lb.	"How Do You Sleep?"	"How Do You Feel Now?"
PATIENTS WITH CARDIOVASCULAR DISEASE															
1	54	W	Heart disease	Low salt diet, digitalis, diuretics, aminophylline, dihydromorphinone	12	11	Rheumatic mitral valve deformity, class 3 C to 2 B *	Mitral presystolic and systolic murmur, enlarged heart, congestive failure; EKG: chronic auricular fibrillation	Digitalis, diuretics, low salt diet	15	Same regimen adjusted	Limited duty	..	Well	Pretty good (B)†
2	52	W	Asthma; heart disease	Epinephrine, ephedrine, ammonium chloride, activity not restricted, morphine	15	15	Bronchial asthma; arteriosclerotic heart disease, class 3 C *	Anasarca, dyspnea on least exertion, enlarged heart, cyanosis, basal rales; EKG: left bundle branch block	Bed rest, low salt diet, mercurials, rectal aminophyllin	13	Aminophylline intravenously, phenobarbital	None	..	Fair	Pretty well (B)
3	54	W	Gallbladder disease	Diets, antacids, antispasmodics, sedation, cholecystectomy, meperidine, codeine	22	12	Autonomic imbalance; biliary dyskinesia	BP 110/70 to 200/120 mm. Hg; epigastric pain, vomiting	Phenobarbital, atropine, intravenous fluids, Sippy diet	1	Same regimen adjusted	Limited duty	8	Moderately well	Feeling well (B)
4	35	W	Rheumatic heart disease; high BP	Digitalis, glyceryl trinitrate, diuretics, total sympathectomy, morphine	18	7	Rheumatic aortic and mitral valve deformity; angina; class 3 C to 2 B *	Double murmurs at base and apex, enlarged heart, congestive failure; roentgenogram: bilateral cardiac enlargement	Bed rest, low salt diet, diuretics, vasodilators	10	Vasodilators	Farm	..	Well	Good (A)
5	50	W	Myocardial infarcts	Bed, oxygen, meperidine, glyceryl trinitrate, cervical sympathectomy, medical thyroidectomy (radioactive iodine)	5	5	Arteriosclerotic heart disease; angina *	EKG: *healed* posterior wall infarct; BMR: —21%	Bed rest, vasodilators, digitalis, thyroid extract 32 mg. daily	10	Self-imposed limitation of activity	None	..	Well	Very little chest pain; feel quite good (A)
6	59	W	Angina	Digitalis, diuretics, low salt, dihydromorphinone	13	13	Arteriosclerotic heart disease; class 3 D to B *	Ascites, leg edema, dyspnea	Low salt diet, mercurials, digitalis, restricted physical activity	14	Same regimen adjusted	None	..	Well	Comfortable (B)
7	47	W	Rheumatic heart disease	Digitalis, diuretics, morphine	13	13	Rheumatic aortic and mitral valve deformity; class 3 C *	Dypsnea at rest, cyanosis, aortic systolic and double mitral murmurs, peripheral edema, right pleural effusion	Low salt diet, digitalis, mercurials, restricted physical activity	10	Same regimen adjusted	None	0	All right	As well as can be expected with that ticker of mine (B)
8	41	W	High BP; stroke; headache	Hospitalized for stroke; then, demanding work and meperidine	2	0.5	Hypertensive vascular disease; chronic brain syndrome	BP 180/120 to 210/125 mm. Hg; spastic right hemiparesis; EKG: *left axis* deviation	Phenobarbital, restricted physical activity	12	Same regimen adjusted, salicylates	None	10	Right well	Well, except for headaches (B)
PATIENTS WITH GASTROINTESTINAL DISEASE															
1	51	W	Gallbladder disease	Diets, belladonna, antacids, dihydromorphinone, morphine	17	3	Psychophysiological gastrointestinal reaction	Fat intolerance; right upper quadrant tenderness; GI and gallbladder roentgenograms normal	Bland diet, belladonna, antacids, and phenobarbital initially; later, full diet	2	Belladonna, antacids	Farm	10	Well	Feel good (B)
3	54	W	Gallbladder disease	Diets, bile salts, antacids, morphine	10	3	Chronic cholecystitis	Tender right upper quadrant; roentgenogram: nonfunctioning gallbladder	Bile salts, belladonna, antacids, bland diet	5	None	Shoe repair	20	Fine	Very well (A)
4	35	N	Stomach ulcers	Milk, antacids, belladonna, morphine	13	13	*Duodenal ulcer and hemorrhage*	Roentgenogram: deformed duodenal cap	Sippy diet, phenobarbital initially	5	None	Orderly	..	Good	Good (B)
5	33	N	Stomach ulcers	Hospitalization, diets, belladonna, antacids, morphine (later heroin illegally)	6	0.5	Duodenal ulcer	Roentgenogram: deformed duodenal cap	Progressive, then advanced Sippy diet; belladonna, antacids	5	Same regimen adjusted	None	20	Well	Well (B)
6	48	W	Stomach ulcers	Diets, antacids, antispasmodics, morphine, meperidine, subtotal gastrectomy	10	6	Subtotal gastrectomy	Epigastric tenderness; roentgenogram: subtotal gastric resection	Bland diet	7	None	Orderly	18	Well	Fine (A)
7	29	W	Stomach ulcer	Hospitalization, diets, antacids, antispasmodics, morphine	8	1	Duodenal ulcer	Epigastric tenderness; roentgenogram: apex of duodenal bulb narrowed	Advanced Sippy diet, antacids, methantheline	4	Phenobarbital for short periods	Handyman	11	Well	Well (B)
9	40	W	Stomach disease	Diets, cholecystectomy, antacids, antispasmodics, morphine (heroin illegally)	6	5	Duodenal ulcer	Roentgenogram: deformed duodenal bulb	Belladonna, antacids, bland diet; then bland diet alone	11	*None*	Limited duty	14	OK	Well (B)
10	13	W	Stomach ulcer	Diets, belladonna, antacids, *concentrated* opium, subtotal gastric resection	10	7	Subtotal gastrectomy	Vomiting; epigastric tenderness; roentgenogram: subtotal gastric *resection*	Advanced Sippy diet, antacids, methantheline	5	*None*	Clothing room	0	Well	Feel like myself now (A)
12	58	W	Stomach ulcer	Antacids, belladonna, gastric operation, irregularly observed diets, morphine	20	5	Subtotal gastrectomy; marginal ulcer	Diagnosed by barium roentgenogram study	Advanced Sippy diet, methantheline	4	None	Limited duty	..	Very well	Very well (A)
PATIENTS WITH PULMONARY DISEASE															
1	36	W	Asthma	"All medicines tried"; skin tests, morphine	27	8	Bronchial asthma	Dyspnea, sputum, musical rales	Aminophylline intravenously at first; ephedrine, epinephrine	2	Aminophylline orally	*Elevator*	25	Very well	*Very well (A)*

2	58	W	Pulmonary tuberculosis	Sanatoria, morphine	33	33	Pulmonary tuberculosis, inactive; bronchiectasis	Dyspnea, 3-layer sputum; roentgenogram: fibrosis, both apices	Bed rest	10	Ephedrine	Limited duty	..	Poor	Fairly well (C)
3	31	W	Tuberculosis of lungs and spine	Sanatoria; then bed rest and morphine at home	10	9	Pulmonary tuberculosis, moderately advanced, active; tuberculosis of spine, inactive	Roentgenogram: fibrocalcific infiltrations both upper lungs, fusion D4-D5; sputum positive	Bed rest, streptomycin, *p* aminosalicylic acid	1	Salicylates	None	15	Well	Well (B)
4	61	W	Asthma	"Nothing helps except morphine"	30	25	Bronchial asthma	Musical rales and prolonged expiration	Aminophylline ephedrine phenobarbital tablets	2	Aminophylline intravenously	Limited duty	21	Well	Fine (A)

PATIENTS WITH BONE AND JOINT DISEASE

1	50	W	Tuberculosis of spine	Sanatoria, 3 spinal fusions, dihydromorphinone	24	24	Tuberculosis of thoracic spine, inactive	Roentgenogram: stable tuberculosis and surgical fusion of lower dorsal vertebrae	Physiotherapy, salicylates	..	Bed board, salicylates	Library clerk	5	Fair	Fairly well (C)
2	40	W	Osteomyelitis, left hip	Bed, casts, curettages, morphine, methadone	38	26	Chronic osteomyelitis, inactive, with pain	Wide scars, left thigh; roentgenogram: marked arthritis and bony ankylosis of left hip joint	Physiotherapy, salicylates	8	None	None	..	Fine	Excellent condition (A)
3	47	W	Osteomyelitis after fracture	Frequently hospitalized for recurrences; morphine	13	13	Osteomyelitis and old fracture of right tibia and fibula	Draining sinus; roentgenogram: osteomyelitis, sequestrum, old fracture	Penicillin	4	None	Kitchen	..	All right	Good (B)
5	38	W	Painful right hip	Surgical "cupping" right hip, morphine	3	1	Prosthetic head, right femur	Limited motion right hip; roentgenogram confirms	Physiotherapy, salicylates, limited activity	5	Same regimen adjusted	None	..	Well	Considerably improved (A)
6	44	W	Arthritis	Salicylates, physiotherapy, morphine	25	13	Rheumatoid arthritis of spine	Kyphosis; roentgenogram: Marie-Strumpell arthritis of spine	Sought no treatment	6	None	Clerk	..	Well	Very well (A)
7	59	W	Arthritis of spine	Salicylates, physiotherapy, x-ray therapy, cortisone, codeine, meperidine	20	2	Rheumatoid arthritis of spine	"Poker" spine; roentgenogram: extensive Marie Strumpell arthritis of spine	Salicylates	9	Cortisone, codeine	Limited duty	..	Well	Excellent (A)
8	45	W	Osteomyelitis in stump of left leg	Revision of stump, excision of neuromas, dihydromorphinone	12	12	Left midcalf amputation	Well healed stump, painful on manipulation	Sought no treatment	7	None	Clothing room	..	On and off	Fair (C)
9	40	N	Arthritis	Long hospitalization at 17, morphine	33	28	Rheumatoid arthritis, multiple	Swelling and limitation of motion in hands and feet	Salicylates, physiotherapy	9	Same regimen adjusted	Farm	..	OK	Good (B)
11	55	W	Arthritis of neck	Salicylates, morphine, physiotherapy for limited neck motion	5	5	Cervical osteoarthritis, C5 6-7	Atrophy of shoulder and arm muscles; spastic paraparesis; roentgenogram: disc degeneration and extensive arthritic changes	Tests only, explanation of diagnosis	6	Salicylates	Limited duty	..	Fair	Fair (C)

PATIENTS WITH NEUROLOGICAL DISEASE

1	57	W	Diabetic leg pain	Protamine zinc insulin, full diet, vitamins, dihydromorphinone	4	3	Diabetic neuropathy	Diabetic retinitis; peripheral neuritis; roentgenogram: demineralization of distal leg bones	Insulin mixture, diabetic diet, vitamins B_1 and B_{12}	9	Salicylates	None	..	Well	Fairly well (B)
2	40	W	Migraine	Histamine, electroshock, diuretics, psychotherapy, dihydromorphinone, methadone	23	10	None	None; "Few headaches while here"	Sought no treatment	2	None	Orderly	12	Never well	Feel pretty well (B)
3	48	W	Back injury	Morphine, laminectomy, fusion, cast	1	1	Spondylolisthesis, L5-S1; surgical fusion L4-L5 S1	Roentgenogram confirms; tenderness	Limited duty, physiotherapy, salicylates	7	Mephenesin, quinine	Carpenter	15	Well	Much better than on drugs (A)
4	51	W	Sciatica of left leg	Bed rest; then up on crutches, codeine, morphine	13	13	Herniated intervertebral disc L5-S1	Diminished left knee and ankle reflexes; hypesthesia; roentgenogram: narrowed L5 S1 interspace	Physiotherapy, salicylates	4	Same regimen adjusted	Kitchen	..	Well	Very well (A)
5	31	W	Cord tumor	Laminectomy, postoperative diagnosis scar tissue only; morphine	4	4	Psychophysiological musculoskeletal reaction	Able to walk on crutches only; neurological examination normal	Encouragement, limitation of secondary gain; two canes; then, one cane	12	Physiotherapy	None	..	Well	Fair (A)
7	23	W	Broken back and paraplegia	Immobilization, laminectomy, cordotomies, morphine, meperidine	2	2	Compression fracture L-1; flaccid paraplegia	Paralysis and wasting, both legs; atonic cord bladder; roentgenograms confirm	None	4	None	None	..	Well	Very well (A)
9	44	W	Right facial pain	Salicylates, histamine, supraorbital neurectomy, sphenopalatine blocks, morphine	13	13	Right "sphenopalatine neuralgia"	Vasodilatation and lacrimation in right eye when in pain	Lidocaine block of right sphenopalatine ganglion; infusions of calcium, ergotamine tartrate, and procaine	5	Barbiturates occasionally	Handyman	..	Fair	Have not felt so well in 13 years (A)
10	51	W	Tabes dorsalis with gastric crises	Antiluetic therapy, symptomatic therapy, morphine; well between attacks	20	5	Tabes dorsalis with gastric crises	Argyll-Robertson pupils, absent knee and ankle reflexes, attacks of abdominal pain, nausea and vomiting	Intravenous fluids, phenobarbital, intercostal nerve blocks	0	Narcotics intermittently	None	20	Fair	Well between attacks (D)
11	37	W	Causalgia of right foot	Fractured by land mine in World War II; operation, morphine	9	5	Neuropathy right tibial nerve due to trauma; causalgia	Dysesthesia in distribution of right tibial nerve; roentgenogram: healed fracture right tibia and fibula and demineralization of right lower leg bone	Sought no treatment	4	No treatment sought	Clothing room	..	Fine	Very well. Can handle that pain by myself now (A)
12	27	W	Painful phantom arm; heart disease	Right arm blown off in World War II; long hospitalization, morphine, quinidine	7	7	Painful phantom right arm; anxiety reaction	Tachycardias, sweating, tremors, clammy hands	Sedation	0	Psychiatric care	Orderly	12	Well	Much better (A)

---

* Nomenclature and Criteria for Diagnosis of Diseases of the Heart, ed. 4, New York, New York Heart Association, 1939.

† Code letters represent clinical evaluation of result, as described in text

ment was 135 days. This was extended, when required, to provide at least 100 days of treatment from the last dose of narcotics. It may be seen that the Lexington setting incorporates a number of features that the individual physician could reproduce for the medically addicted patient in an attempt to obviate the continued need for narcotics. Perhaps most important is the knowledge that withdrawal from narcotics may be accomplished safely during treated chronic illness.

Medical Addiction.—In the definition of medical addiction used in this study, reliance is placed on the patient's statement that he first received narcotics from a physician. For verification, the patient's recorded statements on that point during this and previous admissions were reviewed. Veracity therefore was equated with consistency. Because of the nature of drug addiction, useful information from external sources was not obtainable. Similarly, when any physician is called on to attend an addicted patient, the patient's statement as to how he became addicted is all that is usually available to the physician.

There is good reason to believe that among persons who become addicted to narcotics during treatment for illness a number would accept withdrawal from narcotics in much the same cooperative spirit with which treatment of postoperative phlebitis or other complications would be accepted by a patient recovering from an abdominal operation. The factors of association with other addicts and of access to illegitimate sources of supply are absent. The person remains motivated by the social condemnation of opiate addiction. On his part, the physician has the same continuing responsibility to his patient for the treatment of medical narcotic addiction that he would assume in cases of other therapeutic complication. To dismiss a patient from one's care soon after realizing that he is addicted is both physiologically and psychologically unjustifiable and socially unsound. Planned withdrawal from narcotics should be attempted after informing the patient that it is an uncomfortable, but relatively brief and definitely self-limited, period. If withdrawal fails because of marked manipulative behavior directed at securing narcotics, arrangements should be made for direct admission to an institution for the treatment of opiate addiction. It is generally agreed that institutional treatment is required for the confirmed addict. An excellent review of the management of such addicts has recently appeared in THE JOURNAL.[8]

Methods of Withdrawal.—It has been stated in this report that, despite the presence of essentially irreversible illness, withdrawal from narcotics may be accomplished safely if it is done gradually. The methadone substitution method [7] is used routinely at the Lexington hospital. As an alternative plan, gradual withdrawal of the drug of addiction may be carried out. However, the methadone substitution method is recommended in cases of meperidine addiction. The length of action of meperidine being relatively short, injections would be required at intervals of two to three hours, both day and night, to prevent the appearance of abstinence changes between doses. Whatever the method of withdrawal, a procedure that does not use opiates may result in a death in sick persons addicted to large doses of narcotics.

Special care has to be exercised in patients with cardiac insufficiency. Patients with active tuberculosis may be withdrawn gradually from narcotics without danger of aggravating the tuberculous process. All addicted patients admitted to the tuberculosis ward of the Lexington hospital are withdrawn from opiates unless the disease is so advanced that death is likely. After withdrawal, they gain weight, observe bed rest, and sleep spontaneously. Cough, if distressing, is treated with minimal amounts of codeine, although other medicaments to relieve cough usually suffice.

This report does not refer to cases of painful, fatal illness. For patients such as those dying of carcinoma, the question of withdrawal does not arise. The concern of the physician is primarily with relief of suffering and not with restoration to useful life.

Management of Chronic Pain.—In this study it ha been demonstrated that, under the conditions describe after withdrawal it is possible for former opiate addic to adjust without narcotics to chronic pain or discom fort incident to chronic illness. It should be noted that th term "medical addict" as defined in this report implie nothing with regard to the patient's preaddiction per sonality. Even if clear criteria were available for the diag nosis of normal persons (in the psychiatric sense), i is hardly likely that all or most of the patients include in this study would fall into that category. It seems, there fore, that, even when the problem is complicated by chronic, painful disease, successful withdrawal and satisfactory adaptation without narcotics are dependent on factors other than the preaddiction personality. At least in the setting described in this report, the attitudes and other activities of the physician appear to play a decisive role in many cases.

Morphine is not the answer to chronic pain. Because of the development of tolerance to the analgesic effects of morphine, alleviation of pain becomes inadequate. Under such circumstances the physician, by gradually withdrawing narcotics, does not deprive the patient of any actual benefit but protects him and his family from the possible legal, social, or economic difficulties attendant on opiate addiction. The administration of morphine to a patient with chronic pain is a short-lived type of kindness. Long-term kindness would begin when opiates are withheld or withdrawn in favor of other therapeutic measures.

Clinically, the distinction of organic pain from psychogenic pain cannot be sustained and should be discarded. No matter how tangible its source of origin, in the final analysis pain is a psychic phenomenon. It is invariably both a sensory and an emotional experience. Factors affecting any aspect of this whole will modify the total experience. In meeting the challenge of chronic pain, management directed simultaneously toward several aspects of the total experience is most likely to be successful. Means of relieving chronic pain other than prescription of opiates should be exhausted one by one. Such measures include the use of non-narcotic medicaments, consultations with specialists, physiotherapy, radiation therapy, anesthetic blocks, and surgical procedures for the relief of pain. At the same time, adjustments in the patient's life setting should be an intrinsic part of the therapeutic plan: increase or, more commonly, decrease of physical activity; rest periods, possibly combined with self-administered physiotherapy; simplification or increase of responsibilities, at work or at home. These are but a few examples.

---

[8] What to Do with a Drug Addict, report of the Council on Pharmacy and Chemistry, J. A. M. A. **149**: 1220 (July 26) 1952.

Role of Physician.—A major factor in this adjustment is the performance of the physician. The physician who views pain traditionally, as merely a symptom of physical disease, fails to see that he has before him a personality experiencing pain within an individual mental framework. He disregards the emotional changes that arise with pain (such as increased dependency needs and self-centeredness) and consequently fails to utilize the resources of that personality in adapting to pain. Such a physician finds it necessary to administer narcotics frequently and, because he offers nothing else, tends to make the use of narcotics essential to his patients. On the other hand, the attentive physician who is able to offer his patients sympathetic understanding, steady support, and realistic perspective obtains similar results while resorting infrequently to habit-forming drugs. He prescribes drugs as a specific part of the relationship between physician and patient and not as a substitute for that relationship.

Finally, the physician has a continuing responsibility in the prevention of medical addiction by consistently limiting the administration of narcotics to patients presenting definite indications. There is increasing evidence that a basic reorientation is needed in situations in which the routine use of opiates had appeared well established. To cite only one example, Papper and associates[9] have shown that over one-third of unselected patients on an active surgical service had no significant postoperative pain. In determining indications, it is important to evaluate patients individually. Special care should be exercised in prescribing narcotics for those who are or have been alcoholics and for patients whose complaints are markedly out of proportion to the physical findings. Narcotics are not the proper means of alleviating distress resulting from emotional conflict.

SUMMARY

In a representative group of 1,020 male opiate addicts consecutively admitted to the Public Health Service Hospital, Lexington, Ky., the incidence of patients medically addicted to narcotics was 27% among whites and 1.2% among Negroes. The former percentage is considerably higher than has previously been recognized. Among medical addicts, those patients who had been addicted during self-limited illness were essentially healthy on admission to the Lexington hospital. Their management was identical with that of nonmedical addicts. A "syndrome" of the chronically ill medical addict is identified: the typical patient is a man of middle age with late onset of addiction (fourth decade), demonstrably ill, and addicted to morphine or to a synthetic narcotic that he first received from a physician, to the point of addiction, during treatment for illness. Among 50 such medical addicts studied, all had been admitted for the treatment of narcotic addiction while suffering from an essentially irreversible painful illness, during treatment of which they had become addicted. All were withdrawn safely from narcotics by the methadone substitution method. After these patients had been abstinent from narcotics for about 100 days, 84% stated that they felt well or very well while receiving merely the specific medicaments, non-narcotic analgesics, and physiotherapy required by their underlying illness. Many were able to hold a work assignment in the hospital.

Chronic illness need not be regarded as an indication for the continued administration of narcotic drugs. The successful management of chronic pain without the prescription of narcotics rests on the recognition that pain is never solely a symptom of physical diseases but is an experience of the total personality. Treatment, therefore. must be directed simultaneously toward several aspects of the total experience.

3801 University St. (2), Montreal, Canada.

---

[9] Papper, E. M.; Brodie, B. B., and Rovenstine, E. A.: Postoperative Pain: Its Use in the Comparative Evaluation of Analgesics, Surgery 32:107, 1952.

Morbidity and Mortality in Poliomyelitis.—In each of the past six years the reported incidence of acute poliomyelitis in the United States was higher than at any time in the past. The number of cases reached an all-time peak of nearly 58,000 in 1952, and last year, with about 36,000 cases, was the third highest on record; these figures compare with somewhat over 27,000 cases reported in the major epidemic year 1916. During the quarter century from 1917 to 1942, in only three years did the reported cases of poliomyelitis exceed 10,000; since then, every year exceeded that figure without exception. In contrast to the rise in morbidity are the reassuring facts on the trend of mortality. . . . In the past decade the average death rate was below that in the first two decades of the period under review. Even the peak death rates in recent years were less than one tenth the rate of 36.8 per 100,000 recorded in 1916. Several difficulties are encountered when one attempts to interpret the morbidity and mortality trends in poliomyelitis for the country as a whole. The incidence of the disease fluctuates widely from year to year, as does its geographic distribution. Adequate reporting of cases on a nationwide scale began little more than 20 years ago, and reporting practices have by no means been uniform. . . . The contrasting trends of morbidity and mortality reflect, to some extent, the increased proportion of nonparalytic cases. . . . The proportion of nonparalytic cases reported has always tended to be higher in epidemic than in nonepidemic years. . . . The reporting of cases was incomplete in earlier years, but in recent years there has been some over-reporting of the disease. The wide publicity that has been given poliomyelitis, coupled with the understandable fear of the disease, has made both parents and physicians very conscious of it. Consequently, children with presumptive symptoms are sometimes reported as having poliomyelitis and are counted in the case records although the subsequent facts do not justify the initial diagnosis.—Statistical Bulletin, Metropolitan Life Insurance Company, July, 1954.

J.A.M.A., Oct. 16, 1954

PREMARITAL MEDICAL EXAMINATION

Nadina R. Kavinoky, M.D., Los Angeles

The premarital medical examination can not only prevent the transmission of venereal disease, as the physician complies with the state laws, but with the addition of a few simple procedures and explanations by the physician at this time, the examination can also prevent many marital maladjustments. The physician can prevent misunderstandings from becoming deep-seated problems. He can give the couple such information about their own sexual organs that they can consummate their marriage without undue trauma. The physician can recognize and treat potential medical threats to marriage. Fortunately, many parents, religious leaders, and educators are turning to the physician for medical help in preventing annulments and divorces. The premarital examination plays a large part in this education.

STATE LAWS

The premarital laws in 34 states, and the marriage courses given by church and college, bring the bride and groom to a physician. The premarital laws require a health certificate before the couple is granted a license to marry; however, the laws vary from state to state. Some only require serologic testing of the male partner; other states require serologic tests and medical examination of both partners. The medical examination is designed to detect syphilitic lesions that have not as yet shown a positive reaction in the blood.

EXAMINATION REVEALS "TROUBLE SPOTS"

A premarital examination as comprehensive as that advised by the American Medical Association for periodic check-ups can relieve anxieties and help a couple consider the health aspect of their plans and important decisions. A medical, personal, and family history may reveal traumatic experiences. A sex inventory questionnaire may reveal ignorance of simple facts or interest in psychosexual pathology. The couple's ability to ask or answer questions, their need to confess, or their reticence to discuss past indiscretions are significant. The systemic examination may reveal diabetes, obesity, endocrine imbalance, malnutrition, or an unstable nervous system. These may affect libido, energy for sexual activity, or may be the cause of nervous exhaustion, instability, and tensions. Hyperthyroidism, for instance, affects temperament and reaction time. Respiratory or cardiorenal disease may complicate pregnancy. The pelvic examination may reveal immature sex organs or pelvic abnormality that may limit sexual desire and capacity, complicate the first coitus, and lead the couple to conclude that they are sexually incompatible. Even moderate pain or bleeding in the emotionally immature bride may be so traumatic that dyspareunia may be followed by vaginismus and eventually by an annulment.

Psychological Threats.—Psychological threats lie in inaccurate concepts of sex based on superstitions, hearsay, and gossip, on sordid newspaper accounts of divorce and sex crime, unrealistic expectations of sex performance based on romantic literature and films, and on statements made in some of the older books on marriage. Such inaccurate concepts are: (1) that the hymen is a completely intact membrane that must be painfully broken and bleed at the first coitus to prove virginity, (2) that sexual compatibility is proved by a simultaneous orgasm, and (3) that the husband is responsible for his wife's orgasm regardless of her sexual capacity. As a result of these misconceptions brides are disappointed and grooms frustrated; they feel sexually inadequate if the bride fails to have one or more orgasms even before the bruises in the hymen are healed. These concepts put such emphasis on the orgasm that other joys and satisfactions are overlooked.

Affective Threats.—Affective threats lie in emotional immaturity, which causes unhealthy sexual and personal adjustment. This may cause frigidity, premature ejaculation, and impotence, which may be transitory incidents or may become deep-rooted maladjustments. Guilt, remorse, or fear—that a previous venereal infection will recur and be transmitted to the loved one, fear of pain, fear of unwanted pregnancies, fear of sexual inadequacy due to masturbation or to previous unsatisfactory performance with a prostitute—are the cause of much tension. Fear of sexual incompatibility due to size of their respective organs also occurs. A girl may have heard of brides who were too small, or the bride herself may have been told by her physician that she is small. She becomes conscious of the size of the erect male organ without any consciousness of how adequately her own sex organs are prepared to receive the erect penis.

One finds fear of the physician, of instrumentation, of unknown procedure, and fear that the examination will reveal past indiscretions or evidence of masturbation. A deep-seated fear of the bride and of her mother is that the examination, or fitting of a diaphragm, will break the "intact hymen" and remove evidence of virginity. Embarrassment at having the vulva exposed, looked at, or touched is a normal reaction, more deeply instilled in some racial groups than others. The use of a model of the pelvic organs helps the bride visualize her own organs and can make the examination more objective. This will put a woman at ease.

As a result of many interrelated factors, brides and grooms vary in their readiness for marriage. It is not their chronological age, but the kind of preparation at home and school, that helps them make mature adjustments.

THE BRIDE AND GROOM

Brides can be divided into two major groups; between 50 and 65% are virgins [1]; the others have had sexual experience in a previous marriage, premarital experience with their fiancé, or promiscuous sexual contacts. Some virgins have become familiar with the feeling of an or-

---

Read before the Section on Obstetrics and Gynecology at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 23, 1954.

[1] Warner, M. P.: The Premarital Medical Consultation, M. Woman's J. 50:293, 1943. Kinsey, A. C.; Pomeroy, W. B.; Martin, C. E., and Gebhard, P. H.: Sexual Behavior in the Human Female, *Philadelphia*, W. B. Saunders Company, 1953.

gasm through erotic dreams, masturbation, and petting without complete sexual contact. Others only begin to develop sensory perception through petting and engagement familiarities. Such experiences sensitize the genital nerve endings in the clitoris. Some brides need several months of manual stimulation of the clitoris for a spontaneous orgasm to develop. Some virgins are familiar with the structure of the hymen and the presence of a vaginal canal through the use of inserts for menstrual protection; others have learned the scientific nomenclature in their biology classes but cannot visualize their own sex organs. Many know nothing about the "facts of life" or how to cooperate to achieve their first sexual union.

Grooms also vary in their background, concepts, sexual experience, and understanding. Sexual experience may not help the groom understand how to consummate sexual union with a virgin or how to obtain and give sexual and emotional satisfaction. Grooms vary in their ability to maintain an erection and control their orgasm. This may be due to anxieties, to long periods of continence, or to long periods of release through masturbation or petting. Most grooms are more sexually mature, familiar with their sex organs and function, and have a more physical concept of the sexual relationship than brides have. Some appreciate the value of tenderness, patience, and affectionate, sexually stimulating caresses of the erogenous zones as means of developing a spontaneous response. Others are conscientious, literal, even mechanical in their sexual approach.

PELVIC EXAMINATION

The first step in the pelvic examination of a virgin is inspection of the vulva. The physician should record the appearance of the hymen and the size of the opening before he begins the bimanual examination. After palpation, he should record the texture of the hymen, whether thin and elastic, thick and fibrous, or whether it bleeds easily. The first procedure that helps the bride understand and cooperate is teaching her how to relax and contract the vaginal sphincter and pubococcygeous muscles.[2] Even the fearful virgin with a hypertrophied sphincter muscle soon learns how to cooperate and develop a more spontaneous rhythm. This exercise prevents "honeymoon cystitis" in the bride who has a mild degree of stress incontinence. The second procedure consists in helping her insert a well-lubricated Pyrex centrifuge tube. This helps the virgin realize that there is a normal opening in the hymen that leads into a deep vaginal canal.

After the patency of the vaginal canal is determined, the tip of the tube is placed within the introitus and tilted to follow the natural axis of her vaginal canal. She is then asked to bear down as she inserts the tube. The rate at which she introduces the tube and her facial expression reveal her anxiety. The return of color to her face and her relief, as she discovers no bleeding and no pain, convinces the physician of the therapeutic value of this simple procedure. The bride learns more about her "mysterious" sex organs in these few minutes than she could have learned in hours of talking and studying. The bimanual examination, using a vaginal speculum, and fitting a diaphragm can usually be done at this time. If the girl is tense and fearful these can be postponed until the second visit.

THERAPY

Therapy begins with the interview, history, and examination. In fact, it begins when the couple realize that their physician is interested in helping them make their dreams of "living happily ever after" come true. Explanations, assurance, and peace of mind have psychotherapeutic value. This is enhanced by rapport with the physician and his staff, their kindly, patient, and sympathetic interest and understanding of the couple's needs and even their mistakes. The physician who is brusque, forbidding, cynical, or who sits in judgment cannot put a couple at ease or make them receptive; he only strengthens their defense. These are intangible but influential aspects of the physician-patient relationship.

Some medical problems should be treated before the wedding, others postponed. Malformations of the hymen and vaginal canal and hypertrophy of the vaginal sphincters can obstruct the consummation of the marriage by making the first coitus a painful and psychologically traumatic experience. A small opening, less than 1 cm., can be stretched, first in the office, then at home. This should be done only after consultation with the bride and groom, referring to the condition as one found in the "super-virgin." The word "small" has too many inaccurate implications. Stretching is accomplished by one or two 15-minute sessions, in which the bride herself inserts several graduated vaginal or rectal dilators. These should be well lubricated with an anesthetic ointment. When she learns to relax the vaginal sphincter and painlessly introduce a dilator that is ¾ in. in diameter, she continues the stretching at home, following Dickinson's[3] suggestions. Long, warm douches soften the rigid hymen and reduce the hypersensitivity of the membrane.

Hymenectomy or hymenotomy is surgically expedient but psychologically traumatic; vaginismus is not relieved but aggravated. Leaving the malformed hymen to nature, even with an anesthetic cream, is a good way to prepare the couple for an annulment. Septums in the vaginal tract must be treated surgically. Immature or atrophic vaginal canals can be treated with estrogens and warm douches. The juvenile or senile vaginal tract shows the same characteristics. The vagina is short and inelastic, the mucosa thin, bruises easily, and has only poorly developed rugae. It is gratifying to see the development of the immature canal and the retardation of the atrophic process in the older bride when the pattern of frequent gentle sex contacts is established.

Grooms may be sexually immature or inadequate in function, not necessarily in size, but need treatment for their endocrine, nutritional, and metabolic problems as well as assurance, understanding, and encouragement to relieve their anxieties. Temporary impotence often occurs from the groom's inability to inflict pain on his bride. This reaction is normal in an intelligent, sensitive man. Helping the bride understand and cooperate can prevent the groom's anxiety about this problem. Other anxieties are created by fear of pregnancy, coitus interruptus, or condoms.

---

[2] Kegel, A. H.: Sexual Functions of the Pubococcygeous Muscle, West. J. Surg. 60:521-524 (Oct.) 1952; Active Exercise of the Pubococcygeous Muscle, in Progress in Gynecology, Meigs, J. V., and Sturgis, S. H., editors, New York, Grune & Stratton, 1950, vol. 2.

[3] Dickinson, R. L.: Human Sex Anatomy: A Topographical Hand Atlas, ed. 2, Baltimore, Williams & Wilkins Company, 1949.

Pregnancy must be discussed. Some couples are ready; others must be encouraged to start their family to prevent sterility. Brides who are already pregnant need the physician's help to accept their unplanned child without transferring guilt to the innocent infant.

CONTRACEPTIVES

Many couples need and request contraceptive advice. The vaginal diaphragm and jelly is the most effective contraceptive for the virginal bride. She can be fitted and instructed in its accurate use several weeks before the wedding. Most brides learn to place it accurately and remove it in two 15-minute practice sessions with the nurse. Prior to the third visit, the bride is instructed to place the diaphragm the evening before the appointment and leave it in place. The physician checks her technique, the fit and comfort of the diaphragm, and inspects the lateral walls of the vaginal canal for any signs of pressure or irritation. After the bride returns from her honeymoon she often needs a larger size, as the rugae and vaginal musculature have relaxed. The condom and jelly is less efficient in the virgin, as it slips or breaks from the friction of a spastic vaginal sphincter. The rhythm, safe period method reinforced by a temperature chart is best adapted for the couple who feel guilty using a mechanical contraceptive. Guilt could create new tensions, block their psychological adjustment, and thus prevent the development of emotional values in the marriage.

NERVOUS EXHAUSTION

Nervous exhaustion in the acute form called "premarital jitters," should be treated by supportive treatment—additional sleep and food. A bride on the verge of tears is hardly able to create happy sexual contacts. Nervous exhaustion also responds to the satisfaction of normal emotional needs for love, affection, and security; for understanding, encouragement, attention, recognition, and status. Family life is enriched by sharing work and responsibilities, success and failure. Such cooperation and comradeship is reflected in the couple's interpersonal and sexual relationships. These constitute the psychic background of their psychosexual pattern and release the dynamic and creative forces that enrich living as well as create new life.

PSYCHOSEXUAL PATTERN

Psychic satisfactions in the couple's intimate relationship are many and varied. Pleasure, adventure, and excitement in the sexually stimulating preliminaries result from the tender caresses of any and all erogenous zones and from spontaneous changes of position during sexual intercourse. Pleasure in the sexual contact and activity, with the added satisfaction of the orgasm, is biologically essential in the male. The orgasm has psychological value in the female, even though pregnancy does not depend on her orgasm. The physician must sanction caresses of all parts of the body as well as give greater appreciation of the relaxation, comfort, nearness, and unity that follows the orgasm. To be wanted, to give as well as receive pleasure, kindness, and consideration, although intangible, are important psychic aspects of the sexual relationship. These help the couple accept each other's individual differences in sexual need and capacity. These psychic aspects satisfy the bride's greater need for affection, especially during the time that she is developing her orgasm response.

The psychosexual pattern is a complex, delicately balanced physiological and psychological reaction stimulated by the physiological need for sexual activity. Libido can also be aroused, accentuated, repressed, or inhibited by any and all other sensory perceptions.

Healthy personal relationships based on mutual respect, respect for one's own sex and the opposite sex, and appreciation of the equal social value of the feminine and masculine contribution to the family all affect the attitude toward sex. The economic background also affects the ability to fulfill the masculine or feminine destiny as parents. Cultural backgrounds determine the pattern of the couple's relationship.

COMMENT

The amount of counseling skill and time that the physician must give to help the couple understand and harmonize their differences and create their own unique psychosexual pattern depends on the individual needs of each couple. Their questions and requests help the physician evaluate their specific needs, understanding, interests, attitudes, fears, aversions, and sense of values.

Brides and grooms can be classified into several categories, according to their readiness for marriage. Group 1 are enlightened, healthy, and both sexually and emotionally mature young persons. They have been so well prepared for marriage that the physician only needs to examine them, explain, and assure them. Their specific needs are easily met. Group 2 primarily have physical problems that the physician can treat. Group 3 are emotionally immature or unstable young men and women, even though they may be mature in years. They may have a good education or may have had much sexual experience. These need more time and wise counsel to help them establish new attitudes. Group 4 are seriously neurotic or psychotic men and women. Some are addicted to alcohol or drugs; others have a record of antisocial or criminal behavior or a history of psychotic episodes. These need highly skilled care before they will be able to make the necessary marital adjustments and carry the responsibilities of parenthood. The physician must be on guard to recognize these conditions. The parents of psychotic or mentally deficient sons and daughters go to great lengths to arrange a marriage for them.

The following list of books and pamphlets help the couple learn:

When You Marry—Evelyn Duvall and Reuben Hill
Marriage for Moderns—Henry Bowman
Building a Successful Marriage—J. T. Landis and M. G. Landis
Before You Marry—Sylvanus Duvall
Facts of Life and Love—Evelyn Duvall
Personal Adjustment, Marriage, and Family Living—J. T. Landis and M. G. Landis
Family Living—Evelyn Duvall
Marriage and Family Relationship—Robert Foster
Modern Pattern for Marriage—Walter Stokes
Marriage—Robert Harper
Marriage Manual—Abraham Stone
Marriage and Sexual Harmony—Oliver Butterfield
A Handbook for Husbands and Wives—Theodore Arden

Time, love, and patience are necessary to absorb these new concepts of right and wrong, of normal or abnormal, of values and objectives into their own feeling. Knowledge can be sterile without motivation of the emotions.

The physician can recognize, evaluate, and treat problems. He can make the examination a constructive experience. He can give the couple new concepts of sex, new appreciation of the emotional values. He can help them develop healthier attitudes and personal relationships that create the spiritual values in everyday life.

2400 Beverly Blvd. (57).

TREATMENT OF JUVENILE MELANOMAS AND MALIGNANT MELANOMAS IN CHILDREN

Henry E. McWhorter, M.D., Frederick A. Figi, M.D.
and
Lewis B. Woolner, M.D., Rochester, Minn.

The concept originally proposed by Pack[1] that malignant melanomas of childhood tend to follow a benign course has been cited repeatedly in medical writing. Theories of Pack[1b] and of Spitz[2] that some as yet unknown hormonal influences inhibit malignant melanomas during childhood and stimulate them after puberty to become highly malignant also find frequent mention. Opposing this view have been reports of a small number of childhood lesions that appeared to be malignant melanomas histologically and clinically.[3] Reflecting this background, the treatment of pigmented tumors in childhood is subject to contradictions and confusion. Conservative treatment of childhood malignant melanomas advised by Pack[1b] is at variance with suggestions for radical excision and dissection of lymph nodes.[4] Such formidable ideas as the prophylactic removal of all childhood pigmented nevi have been offered.[5] Largely resolving these problems, Allen and Spitz[6] recently presented a new and logical concept of these pigmented tumors in childhood. Studies at the Mayo Clinic have provided additional confirmatory evidence.[3] We trust that a review of our studies and a presentation of the principles of treatment of these lesions will be of value not only to surgeons concerned with operative decisions but to all physicians, as these lesions first must be understood, properly diagnosed, and classified before treatment is undertaken.

REVIEW OF LITERATURE

As already mentioned, Pack,[1a] in 1939, reported that malignant melanomas in childhood tended to be of low-grade malignancy and seldom metastasized. Series of cases presented as malignant melanomas in this age group by Sylvén[7] and by Webster and associates[8] gave further weight to this concept, as did additional cases reported by Pack and co-workers.[9] The histological appearance of these tumors was said to be indistinguishable from adult malignant melanomas, yet they all followed a benign course. In 1948, Pack[1b] suggested that these lesions be termed "prepubertal melanomas" and be considered as clinically separate from adult malignant melanomas because of their benign behavior. In 1949, Sylvén[7] reported 11 cases with a 100% survival rate and also made a proposal for a separate clinical classification.

Shortly after Pack's suggestion, Spitz[2] gave evidence that in at least half of these cases there might be some histological, as well as clinical, difference between what she called "juvenile melanomas" and adult malignant melanomas. She included in her series of juvenile melanomas one clinically malignant tumor, however. In the aforementioned recent comprehensive study of malignant melanoma, Allen and Spitz concluded that the lesions with a benign course, long referred to as childhood malignant melanomas and described histologically by Spitz as juvenile melanomas, often could be differentiated as specific histological entities distinct from adult malignant melanomas. Lesions of this specific histological appearance were also seen in adults and followed a benign course. These authors presented five true malignant melanomas in children, all of which had a highly anaplastic histological picture and three of which caused death.

At this point it was becoming increasingly clear that there was a lesion occurring characteristically in children that had a microscopic picture easily mistaken for that of malignant melanoma but that followed a benign course. This lesion, referred to as the juvenile melanoma, was gradually taking its place as a subheading under the classification of benign pigmented nevi. Yet the reported cases of true malignant melanoma with metastasis and death[3] provided documented evidence that malignant

---

Fellow in Plastic Surgery (Dr. McWhorter), member of Section of Plastic Surgery and Laryngology (Dr. Figi), and member of Section of Surgical Pathology (Dr. Woolner), *Mayo Clinic and Mayo Foundation.* Dr. McWhorter is now practicing in Toledo, Ohio.

The Mayo Foundation is a part of the Graduate School of the University of Minnesota.

This paper is in part an abridgment of a thesis submitted by Dr. McWhorter to the faculty of the Graduate School of the University of Minnesota in partial fulfillment of the requirements for the degree of Master of Science in Plastic Surgery.

1. (*a*) Pack, G. T., and Anglem, T. J.: Tumors of Soft Somatic Tissues in Infancy and Childhood, J. Pediat **15**: 372-400 (Sept) 1939. (*b*) Pack, G. T.: Prepubertal Melanoma of Skin, Surg., Gynec. & Obst. **86**: 374-375 (Mar.) 1948.

2. Spitz, S: Melanomas of Childhood, Am. J. Path. **24**: 591-609 (May) 1948.

3. McWhorter, H E, and Woolner, L. B: Pigmented Nevi, Juvenile Melanomas, and Malignant Melanomas in Children, Cancer **7**: 564-585 (May) 1954.

4 Pickrell, K. L; Masters, F. W.; Georgiade, N. G, and Horton, C. E: Tumors of Head and Neck in Infancy, Childhood and Adolescence, Plast & Reconstruct. Surg **12**: 10-23 (July) 1953.

5. Coffey, R. J., and Berkeley, W. T.: Prepubertal Malignant Melanoma, Report of Case, J. A. M. A. **147**: 846-849 (Oct. 27) 1951.

6 *Allen, A. C., and Spitz, S: Malignant Melanoma: A Clinicopathological* Analysis of Criteria for Diagnosis and Prognosis, Cancer **6**: 1-45 (Jan) 1953.

7. Sylvén, B · Malignant Melanoma of Skin: Report of 341 Cases Treated During Years 1929-1943, Acta radiol. **32**: 33-59 (July) 1949.

8 Webster, J. P.; Stevenson, T. W., and Stout, A. P.: Surgical Treatment of Malignant Melanomas of Skin, S. Clin. North America **24**: 319-339 (Apr.) 1944.

9. Pack, G. T.; Perzik, S. L., and Scharnagel, I. M.: Treatment of Malignant Melanoma: Report of 862 Cases, California Med. **66**: 283-287 (May) 1947.

melanoma did occur in children and with the same possibly grave consequences as in adults. Another authentic case was recently reported by Williams.[10] A problem remained, however, in that, according to Allen and Spitz, about a third of the juvenile melanomas could not be differentiated histologically from adult malignant melanomas and could be identified as juvenile melanomas only by knowing the age of the patient. Also remaining for future investigation was their impression that true malignant melanomas in children had a particularly virulent microscopic appearance. Thus, whereas previously it was said that malignant melanomas in childhood were peculiar in their clinical course but were histologically indistinguishable from adult lesions, now the idea was presented that the clinical course of true malignant melanomas in children was comparable to that of lesions in adults but their histological appearance was exceptional. Our experience with these childhood lesions at the Mayo Clinic has offered additional clarification of these new concepts. Our cases, which have been presented in detail elsewhere,[3] will be briefly reviewed as a background for the consideration of treatment.

JUVENILE MELANOMAS

There were 11 cases in the files of the clinic that we thought should be classified as examples of juvenile melanoma. This classification was based on the finding of features described by Allen and Spitz, on the similarity of these lesions to one another, and on the fact that the lesions presented many characteristics that set them apart from both pigmented nevi and malignant melanomas. These 11 lesions occurred in children between the ages of 1 and 9 years; seven of the children were 3 years of age or younger. There were five boys and six girls. The tumors were located oftenest on the head (seven patients), favoring particularly the cheek (four patients). Other lesions occurred on the shoulder, forearm, knee, and dorsum of the foot. The lesions were relatively small, ranging between 4 mm. and 1 cm. in diameter. They tended to be elevated, some of them very slightly, while others formed a rounded protuberant mass. Pigmentation was usually minimal. The color of eight lesions was recorded; six were red or pink, one was slightly pigmented, and one was brown. One lesion was unusual in its occurrence as a hairless nodule in an extensive pigmented nevus. None of the juvenile melanomas were grossly hairy. Most of these lesions had been noted for less than a year. The rate of growth, when recorded, was gradual in four cases and was rapid in one case for the previous three weeks. One lesion did not appear to be growing.

Microscopically, these juvenile melanomas often had several rather characteristic cellular types and patterns and subepidermal features that helped to make them recognizable. Above all, the critical finding appeared to be that the cells were large, often equal in size to large malignant melanomatous cells, yet were peculiarly lacking in the anaplastic changes seen in malignant melanomatous cells of this size. Careful scrutiny of the cells for the anaplastic changes of malignant melanoma is most important in making the occasionally difficult distinction from this disease.

Three of the 11 patients had undergone treatment two to four weeks previously that had not completely eradicated the tumor, and residual growth was found at the clinic after wide excision of the recently treated areas. Three of the juvenile melanomas were treated by local excision only. The remaining five lesions were removed primarily by surgical or diathermy excision, the extent of which was known to be wide in two patients but may have been less in the other three. Four patients received irradiation in addition. All of these patients were followed for 3½ to 23½ years. Eight patients had five-year follow-up studies. All 11 patients were well at the time of follow-up without any evidence of recurrence or metastasis. These studies indicate the benign nature of juvenile melanomas, particularly when it is considered that the treatment in about half of these patients either was delayed after primary inadequate surgical intervention or was merely local excision.

TREATMENT OF JUVENILE MELANOMAS

Although the course in all our cases of juvenile melanoma and those of Allen and Spitz was benign after removal of the tumors, little is known about the ultimate outcome of these lesions if left undisturbed. Allen and Spitz reasoned that there is a tendency for these growths to mature into quiescent intradermal nevi in later life. Two of us (H. E. McW. and L. B. W.) observed a mature intradermal lesion removed from the same extensive nevus in which a juvenile melanoma had been found earlier, which suggests this same process.[3] It is conceivable, however, that certain of these juvenile melanomas may become more active rather than less with the passage of time or with the possibility of some unknown stimulation; however, there is no known reason why they should be considered more dangerous potentially than a junctional nevus.

The removal of any lesion in a child is surely indicated if, because of its size, progressive growth, elevation, minimal pigmentation, or reddish color, it suggests a juvenile melanoma. This removal, we feel, is best performed by excision with a scalpel; the excision need only be adequate for complete removal of the tumor. The junctional element of these growths usually does not extend far beyond the margins of the raised tumor itself, and the dermal element typically does not extend deeply into the subcutaneous tissue; thus, radical excision of normal cutaneous margins and subcutaneous tissue is not considered necessary.

MALIGNANT MELANOMAS IN CHILDREN

Between 1907 and 1949, five children 12 years of age or less who had true malignant melanomas were seen at the clinic. The clinical picture in these five patients differed markedly from that in the previously described group of 11 who had juvenile melanomas. Histological study disclosed a significant difference between the activity of these malignant lesions and that of juvenile melanomas. When first seen, these five patients were 4, 8, 9, 10, and 11 years of age. No signs of precocious development were present. There were three boys and two girls. Four of these lesions were on the face or ear; the site of the fifth is not definitely known but was presumably the thorax. Two patients already had microscopically proved metastasis on admission, and one other had clinically evident involvement of the regional lymph nodes; all three of these prepubertal patients died of generalized metastatic disease within a year after they were seen at the clinic. This occurred in spite of wide excision of the lesion in two patients (previously treated), preceded by dissection of the nodes in one and followed by irradiation of the nodes in the other. The third patient had generalized spread and received no treatment. The other two patients were seen before the primary lesion had shown clinical evidence of spread; these tumors were widely removed, and roentgen therapy was given. One patient died six years after operation, after the slowly progressive appearance of black cervical nodes and generalized metastatic lesions. The other is well 21 years after treatment.

---

[10] Williams, H. F.: Melanoma with Fatal Metastases in 5-Year-Old Girl, Cancer 7: 163-167 (Jan.) 1954.

The primary lesions in all these patients were small (1 cm. or less), including one patient in whom small foci of malignant melanoma were found in an extensive hairy pigmented nevus. Histologically all five lesions were unquestionably malignant; this was particularly noticeable in the irregularity of size, shape, and organization of the cells, nuclei, and chromatin, and in the abnormally enlarged nucleoli. The growths all contained various amounts of pigment, which was demonstrated to be melanin. The microscopic findings were those that would be expected in malignant melanomas in adults. Although several tumors showed great anaplasia, the range of histological activity in all five lesions did not appear to differ from that seen in adult malignant melanomas. Thus, we do not think, as do Allen and Spitz, that malignant melanoma as seen in children has any exceptional histological pattern of excessive virulence. Although at least a dozen cases in the literature demonstrate that true malignant melanomas occur in children and may metastasize and cause death just as in adults, nevertheless these lesions apparently are rare. Aside from their rarity we consider that malignant melanomas in children do not differ clinically or histologically from those seen in adults.

TREATMENT OF MALIGNANT MELANOMAS IN CHILDREN

Suspicion should be aroused, in children as in adults, by any rapidly growing, easily traumatized, or ulcerated growth, or by one that is darkly pigmented or that has changed in color. Radical primary excision has little place in childhood lesions because of the rarity of malignancy. Biopsy or excision is indicated, of course. One should keep particularly in mind that almost all pigmented nevi in children have a prominent junctional change, that is, a superficial proliferating element. These childhood nevi normally are not the mature quiescent "moles" of adults. They are, rather, growing and maturing and will some day, through the "normal evolution" of the pigmented nevus, become the quiescent, harmless, intradermal nevus that is the common adult mole. Rarely will they become malignant. One should remember that any nevus in a child may appear to be enlarging somewhat in size; removal of all of these, although it might be of some theoretical value in preventing malignant melanomas, would be an impossible and never-ending task. When a true malignant melanoma is discovered in a child the treatment should be the same as in the adult.

Local Lesions.—The generally accepted treatment for the local lesion of malignant melanoma is that of radically wide excision, with the probable need for skin grafting of the resulting defect. The margin of apparently normal skin and deeper tissues that should be allowed around a malignant melanoma is variously stated.[11] No specific width of border can be suggested to suit all lesions, but it is imperative to remove the greatest possible margin in view of the fact that reports containing any information on local recurrence present a dishearteningly high rate of 20% or more.[12] This appears to be one factor in the poor results in this disease that could be attacked more vigorously. The excision required for a malignant melanoma differs greatly in extent from that required for a squamous cell or basal cell carcinoma of the skin. This is far from being universally recognized.

Of direct application to this problem is the recent analysis of Allen and Spitz, which presents a new rationale for wide excision in malignant melanoma. Classically, it has been thought that wide excision of malignant melanoma was based particularly on the need to excise the lymphatic and venous channels in the vicinity. This idea goes back through many clinical impressions in the literature to the totally undocumented brief article of Butterworth and Klauder,[11a] in 1934, and the frequently quoted report of Handley,[11c] in 1907. The latter study was based on a single autopsy in which only an extensive area of metastatically involved inguinal nodes was examined; it is questionable that this material has direct application to the problem of the local lesion, even if Handley's conclusions were sound. Allen and Spitz expressed the belief that most local recurrences result not from local lymphatic and venous metastatic spread but from potentially malignant junctional foci that lie in the skin surrounding the primary malignant melanoma. For this reason excision of a wide margin of apparently normal skin is more helpful than excision of the deeper tissues. Allen and Spitz stressed that eight radial sections should be taken to determine microscopically the clearance of junctional change. We agree that this concept is very worthy of consideration in the treatment of these lesions. It is our opinion that the widest practicable excision of the local lesions of malignant melanoma is indicated. As mentioned previously, the resulting defect usually requires some type of coverage, usually provided best by a split-thickness skin graft.

Regional Lymph Nodes.—Most authors agree that radical dissection of the lymph nodes is indicated whenever clinically palpable and operable regional nodes are present. When the nodal involvement is extensive it is a matter for each surgeon to decide whether a major, radically deforming procedure should be undertaken.

---

11. (*a*) Butterworth, T., and Klauder, J. V.: Malignant Melanomas Arising in Moles: Report of 50 Cases, J. A. M. A. **102**: 739-745 (March 10) 1934. (*b*) Decker, A. M., and Chamness, J. T.: Melanocarcinoma of Plantar Surface of Foot: Review of 25 Cases, Surgery **29**: 731-742 (May) 1951. (*c*) Handley, W. S.: Hunterian Lectures on Pathology of Melanotic Growths in Relation to Their Operative Treatment, Lancet **1**: 927-933, 996-1003 (April 6, April 13) 1907. (*d*) Pack and others.[9]

12. Wright, C. J. E.: Prognosis in Cutaneous and Ocular Malignant Melanoma: Study of 222 Cases, J. Path. & Bact. **61**: 507-525 (Oct.) 1949. Butterworth and Klauder.[11a] Decker and Chamness.[11b]

A great number of writers also apparently agree that improvement in the survival rate should result from routine "prophylactic" dissection of the nodes in patients who have nonpalpable nodes.[13]

It is the opinion of the consultants in the section of plastic surgery and laryngology at the clinic that there is no convincing evidence in favor of routine prophylactic dissection of nodes in this disease. Although prophylactic dissection is not considered to be warranted, we do think that hesitancy has no place when dealing with a clinically suspicious lump in the nodal area; dissection of the nodes should be done immediately under these circumstances. By this program we consider that the large percentage of patients who will be cured by treatment of the primary lesion alone, the considerable number who have blood-stream metastasis before or coincident with nodal metastasis,[7] and the patients who have involved nodes beyond the operative site are all spared the unnecessary intervention and risk of a radical "prophylactic" procedure. Of the patients reported by Allen and Spitz to be clinically free of disease five years or more after treatment, 68.3% had only local wide excision and another 13% had dissections of nodes that disclosed no involvement. Thus, more than 80% of the patients who survived five years without disease either patently or conceivably had no need for dissection of nodes.

The crucial question regarding the advocacy of radical prophylactic dissection of nodes in this disease is whether its routine employment would actually improve the overall survival rate. Clarke's series [14] is the only one reported in which patients who had "prophylactic" dissection of nonpalpable nodes performed primarily are compared with patients who had therapeutic dissection of nodes for involvement found during regular follow-up examinations. In Clarke's experience the survival rates were essentially the same whether the regional nodes were attacked prophylactically or were watched and treated later when found clinically enlarged.

COMMENT

It appears that the juvenile melanoma, long mistaken for malignant melanoma in children because of histological similarities and because of its commoner occurrence in this age group, is a specific benign entity and not a variant of malignant melanoma. This same histological lesion has been seen by us in several adults; we also have seen a juvenile melanoma that was removed from the arm of a 14-year-old girl who was having normal menstrual periods and who was found to be well without recurrence 10 years later. It is not, therefore, an exclusively prepubertal lesion. Our experience has been that virtually all of these lesions are histologically recognizable as such. Knowledge of the patient's age may increase the index of suspicion but is not essential for diagnosis. Although admittedly the microscopic differentiation of juvenile melanomas from malignant melanomas may not always be easy, nevertheless it can be made and is greatly facilitated by increasing experience with these tumors. As these lesions make up 6 to 8% of surgically removed nevi in children, familiarity with them should gradually become much more general than it is today.

With regard to the treatment of malignant melanoma, we are not unalterably opposed to the principle of "prophylactic" dissection of nodes for malignant melanoma, but we do consider that at present there is not enough evidence in its favor and there are factors that speak against it. Our experience suggests that little significant improvement might be expected from such a program. Attention could be directed more profitably to treatment of the local lesion, which the consistently high reported rates of local recurrence indicate to be inadequate. Improvement in this factor should significantly increase the already high percentage of survivors who have only local treatment and should decrease the number of patients who have subsequent nodal spread and require dissection of nodes.

SUMMARY AND CONCLUSIONS

The juvenile melanoma is a newly identified lesion that appears to be benign and that can be differentiated histologically from malignant melanoma, with which it has been confused in the past. It comprises 6 to 8% of all pigmented nevi surgically removed from children. It is also seen rarely in adults. Juvenile melanomas should be treated by complete removal, which need not be radically wide.

Malignant melanoma occurs in children and may result in metastatic spread and death. It is rare in prepubertal persons. When it occurs, it does not differ clinically or histologically from malignant melanoma in adults. The treatment of true malignant melanoma in a child should be the same as in adults. As wide an excision of the primary lesion as practicable should be undertaken. The resulting defect usually requires a skin graft. The patient then should be checked frequently for any evidence of involvement of lymph nodes. Regional dissection of lymph nodes is indicated for any nodal enlargement that appears to be metastatic in origin. Routine dissection of regional nodes as a "prophylactic" procedure for nonpalpable nodes is not warranted on the basis of present evidence.

---

[13] Allen and Spitz.[6] Sylvén.[7] Decker and Chamness.[11b]

[14] Clarke, J. M.: Malignant Melanomata: Some Points in Treatment and Prognosis, Australian & New Zealand J. Surg. 22: 8-13 (Aug.) 1952.

Multiple Immunizations.—At the present time inoculation of single antigens need not be given except under special circumstances, such as using pertussis antigen at one or two months of age. Since multiple antigen preparations generally produce little more reaction than antigens used singly, and antibody production is equal to or better because of an adjuvant effect, as in the instance of diphtheria and tetanus in the presence of pertussis antigen, multiple antigen preparations containing these antigens should be employed beginning not later than three months of age, and earlier if the occurrence of pertussis, diphtheria, or both so warrant. Smallpox vaccination may be carried out at any time during the first year of life, but preferably on the last injection of the full course of three or four injections of a multiple antigen preparation. No absolute schedule can be followed under all circumstances, particularly in view of the differences in immunity status of communities, and because field studies have lacked adequate population risk to pertussis and diphtheria under test conditions other than mild endemic occurrence. Further investigations are needed to elucidate the problems involved.—F. H. Top, M.D., F.A.C.P., The Age for Immunization, *Annals of Internal Medicine,* August, 1954.

SPONTANEOUS RUPTURE OF TUBO-OVARIAL ABSCESS INTO THE FREE PERITONEAL CAVITY

Herman H. Lardaro, M.D., New York

The general use of antibiotics has resulted in a decrease in the incidence and severity of pelvic inflammatory disease. Nevertheless, patients with tubo-ovarial abscess are still being seen at Bellevue Hospital. Some of these abscesses rupture and result in severe generalized peritonitis that requires laparotomy. If the rupture is not diagnosed, the patient will die. The possibility of rupture into the free peritoneal cavity must constantly be borne in mind, as the prognosis depends primarily on the speed with which the diagnosis is made and the time interval between rupture and laparotomy.

Of the 24 papers dealing with ruptured pelvic inflammatory masses that were published during the 16 years covered by this report, only 2 were concerned with ruptured tubo-ovarial abscesses. These reported a total of 51 cases. I do not feel, however, that this is a true estimate of the incidence of this condition. The fact that, except for the report of Miller[1] in 1945, no group of such cases has been presented from any large institution with a similar type of gynecologic service would strongly suggest that only a small percentage of these cases have been recognized or at least reported.

INCIDENCE

It has generally been believed that intraperitoneal rupture of a tubo-ovarial abscess is exceedingly rare; so rare, in fact, that it constitutes a curiosity and its possibility is hardly ever considered during the palliative management of suppurative pelvic inflammatory disease. Miller emphasized this supposed rarity by stating that his complacency had been rudely shattered when he found 21 deaths had been caused by ruptured tubo-ovarial abscesses over a six year period at the Charity Hospital of Louisiana. He collected information on 37 tubo-ovarial abscesses that had ruptured intraperitoneally at that institution during the 17 year period ending Dec. 31, 1943. The medical examiner's office of New York City has 24 instances listed as the cause of death in an estimated 7,200 autopsies on women during the nine year period from 1935 to 1943, inclusive. Mention of this possibility is rarely found in current textbooks. No report of this occurrence can be found in Ricci's[2] summarization of the gynecologic literature of the 19th century.

One purpose of this study was to see if criteria for the diagnosis of a pending or probable rupture could be established, as operation before rupture certainly presents less hazards and offers greater leeway for more satisfactory surgery. Surgical ruptures of even large tubo-ovarial abscesses during operation are benign compared with rupture occurring in the closed abdomen. This is true not only in the patients with sterile abscesses but also in patients showing definite clinical evidence of inflammatory activity.

Simpson's[3] rule is still followed on the gynecologic service at Bellevue Hospital in the conservative palliative treatment of pelvic inflammatory disease. However, some patients with tubo-ovarial abscesses respond poorly, if at all, to palliation. Others get worse, and an appreciable percentage of the patients may die if operation is deferred too long.

From January, 1935, to January, 1951, 54,838 patients were admitted to the gynecologic departments of Bellevue Hospital. The primary diagnosis for 11,016 of these patients was pelvic inflammatory disease. Of these, 751, or 7%, had tubo-ovarial abscesses. Twenty-three (3%) of the abscesses were ruptured; rupture was confirmed surgically or by autopsy in 19 cases, and in the other 4 the evidence was unmistakable.

The operative diagnosis was made on the presence of free pus in the peritoneal cavity, directly traceable to a tubo-ovarial mass. The site of rupture usually was easily identified. The amount of free pus occasionally was small; usually, it filled the entire abdominal cavity. In every patient operated on or seen at autopsy, a definite perforation was observed in the mass, which was often collapsed. In no case was the tube identified as an anatomic entity separate from the ovary.

ANALYSIS OF CASES

There was nothing striking about the age of the patients. The youngest patient was 16, and the oldest were 46; there were four patients who were 46 years old. Twelve patients were Negro and 11 were white.

Etiology.—Several authors stress a fall, a blow, or a too vigorous pelvic examination as being the inciting cause of rupture. These factors were not evident in this series. In the eight patients in whom rupture occurred before admission, it was impossible to indict trauma as the cause of the accident. In one patient, rupture occurred 11 hours after the last pelvic examination; in another, it occurred 18 hours afterward. In the other patients, the interval was much longer. In five instances, rupture occurred within two days after admission. In seven others, it occurred from 3 to 10 days after admission. In one of the patients who died, the rupture took place 24 days after admission and several days after the last pelvic examination. In three instances, rupture occurred after the patient had been at complete rest in bed for over five days.

Previous History.—It seems important to note that a history of previous pelvic inflammatory disease existed in only 8 of the 23 patients. Furthermore, in no case was

---

From the Department of Obstetrics and Gynecology, New York University College of Medicine and the Obstetrical and Gynecological Service of the Third (New York University) Surgical Division of Bellevue Hospital.

This paper was presented at the Bellevue Hospital Gynecological Conference.

[1] Miller, H. E.: Rupture (Intraperitoneal, Intra-Intestinal and Intravesical) of Suppurative Pelvic Masses, with Analysis of 53 Cases from Charity Hospital of Louisiana at New Orleans, New Orleans M. & S. J. 98: 115, 1945.

[2] Ricci, J. V.: One Hundred Years of Gynaecology, 1800-1900, Philadelphia, Blakiston Company, 1945.

[3] Simpson, F. F.: The Choice of Time for Operation for Pelvic Inflammation of Tubal Origin, Surg., Gynec. & Obst. 9: 45, 1909.

the inflammatory history that led to the patient's ultimate hospitalization of long standing. In most instances, the impelling symptoms had existed for only several days.

Bacteriology.—Cervical and urethral cultures or smears were taken on most of these cases and were negative for gonococcus in every instance. Cultures taken at operation unfortunately were often not reported. In two of the eight instances in which there was a bacteriological report, the culture was sterile. In two it showed Micrococcus (Staphylococcus) pyogenes var. aureus, and in two others the growth showed M. pyogenes var. aureus and Escherichia coli. In a patient who died after operation, the blood culture had twice been positive for M. pyogenes var. aureus and Esch. coli. In two other cases, cultures were made at autopsy. In one patient, the pus from the abscess showed anaerobic streptococci, while in the other patient Streptococcus viridans was present in the spleen and venous blood. This lack of bacteriological information is not unique. Every report, including those of Miller and Uebermuth,[4] shows the same deficiency. It seems certain, however, that the causative organism may vary and that rupture can occur even in abscesses that are apparently sterile.

Diagnosis.—In 17 instances, the rupture occurred in a left tubo-ovarial abscess. In four, the right tube and ovary were ruptured, and in one case there was bilateral rupture. In one case, the location of the abscess could not be determined.

The diagnosis has been arrived at more frequently than in the series reported by Miller. Miller stated that at the Charity Hospital in Louisiana, the diagnosis was tentatively made in only 2 out of 42 cases, and it was never made definitely. From a perusal of the literature, he concluded that the diagnosis is seldom made before operation or before death in the patients not operated on. A ruptured abscess was our main or sole diagnosis in 16 patients, though 2 patients were operated on primarily for the second possibility of a twisted ovarian cyst. In the remaining cases, the primary diagnoses were diverticulitis with twisted ovarian cyst, intestinal obstruction, ruptured ectopic gestation, subacute salpingitis, infected abortion (two cases), and infected fibroid tumor.

The erroneous diagnosis of one case as subacute salpingitis and another as sepsis secondary to an infected abortion accounted for the deaths of two patients who were not operated on. The problem of diagnosis was somewhat different, depending on whether the rupture was of some duration and had occurred before admission or whether it occurred after admission to the hospital.

DIAGNOSIS

Rupture Before Admission.—In eight of the patients the rupture had occurred before the patient entered the hospital. There seems to be no symptom complex or outstanding laboratory data of much aid in diagnosing this condition. These patients are very sick when admitted, but are not more seriously ill than many patients with marked pelvic inflammation who do remarkably well with palliative therapy. The only constant symptom is that of very severe pain in the lower part of the abdomen. Only two of these patients gave a history of vomiting. Neither the temperature nor the erythrocytic sedimentation rate was markedly abnormal.

Unruptured Tubo-Ovarial Abscesses.—In the diagnosis of unruptured abscesses, two distinct problems present themselves. One lies in the recognition of abscesses that may possibly rupture, so that anticipatory action may be employed. Since but 3% of these tubo-ovarial abscesses ruptured, it is evident that indiscriminate or hasty surgical interference may do more harm than good to the other 97%. The other problem is early recognition and immediate action in those abscesses that do rupture. Unfortunately, no clear-cut criteria warning of rupture were found. Simple recognition that rupture can occur, however, does seem to make diagnosis easier and action more direct. This is shown by the fact that in the last 11 cases, the diagnosis was made and operation performed within hours in 10 instances; in the first 8 cases, the interval was usually days.

Though the general picture presented by these patients prior to rupture is not remarkable, the pelvic findings do offer some help. The impression obtained on examination is one of tense fluctuation in a thin-walled mass. This finding, coupled with a history of pelvic inflammatory disease of short duration and usually with no preceding attacks of inflammation, should put one on guard. That 17 out of 23 ruptures occurred on the left side may be worthy of attention.

Rupture While Patient Was Hospitalized.—Unless the rupture was dramatic, acute, and more or less overwhelming, there was a tendency in the early part of the series to palliate and to await improvement in the patient's general condition. This procedure was based on experience with fimbrial rupture or spillage in cases of acute salpingitis or pyosalpinx; such rupture is usually followed by sealing of the fimbria. In the patient with ruptured tubo-ovarial abscess, this was found to be an error.

Clinical Course.—Once rupture into the free peritoneal cavity has occurred, the condition of the patient grows steadily worse. The initial symptom is a very severe lower abdominal pain of sudden onset, followed often by chills, less often by vomiting, and in a few cases by both. Depending primarily on the degree of rupture sustained, the patient rapidly goes into varying degrees of shock and becomes cold, clammy, and apprehensive. The shock is progressive with only occasional improvement, which is temporary. The pulse and the blood pressure are two most important signs. The amount of spill seems to bear a direct ratio to the rapidity of the pulse rate, which, on several occasions, reached 160 beats per minute. The blood pressure drops steadily and rapidly. Only one patient whose blood pressure remained below 100 mm. Hg systolic at the time of operation survived. A persistent drop in pressure calls for extreme haste. Neither the blood cell count nor the sedimentation rate shows any remarkable change early in rupture.

In some cases, the site of rupture is small and there occurs a partial walling-off of the process so that there is only a gradual seepage of pus into the free peritoneal cavity. In these instances, the patient's condition goes downhill very gradually without apparent cause. In the absence of any systemic disease to account for the picture and in the presence of definite pelvic inflammatory masses, a patient steadily losing ground should be operated on.

---

[4] Uebermuth, H.: Die Ruptur von Pyosalpingen und Tuboovarialabscessen unter Berücksichtigung der "gynäkologischen" Peritonitis, Deutsche Ztschr. Chir. **246**: 188, 1936.

The disappearance of a known pelvic mass in a patient who suddenly gets worse is of diagnostic importance. This point is stressed by Sabadini,[5] who noted its occurrence five times in the literature, and by Miller, who noted it twice in his 42 cases. It occurred in only one of my patients. Here, it was noted six hours before the patient went into profound shock. The early and more frequent use of flat plate x-ray studies of the abdomen for free fluid might be of assistance in detecting cases of small, repeated, or continuous leakage of pus into the free peritoneal cavity.

TREATMENT

The only treatment for frank rupture of a tubo-ovarial abscess with spillage into the free peritoneal cavity is surgical treatment. The mortality can be decreased appreciably by early recognition of this condition and by immediate operation. This is borne out by the reports of Bonney[6] and Lubke.[7] It is also emphasized in this series. In the eight patients who died, the time interval from rupture to operation was 15 hours, 31 days, 9 days, 11 hours, 23 hours, 2 days, 5 days, and 6 days (first rupture) and 16 hours (second rupture). In the 11 who survived, the time interval was 6 hours, 16 hours, 6 hours, 6 hours, 23 days, 54 hours, 3 hours, 14 hours, 5 days, 4 hours, and 3 hours.

Of those who died, only two were operated on within 16 hours. Many consider 12 hours the upper limit of safety. Miller's report of 10 deaths in 12 patients operated on and the 11 survivors among the 19 patients operated on in the present series serve to emphasize the importance of close observation, early diagnosis, and prompt surgical intervention.

The number of patients surviving the operation was much higher when the operation was done within 12 hours: Bonney reported that 14 out of 20, or 70%, recovered; Lubke reported that 63% recovered; and in the Bellevue series, 6 out of 7 (86%) recovered. When the operation was done after 12 hours, Bonney reported that 1 out of 5 (20%) recovered; Lubke reported that 33% recovered; the Bellevue series showed that 5 out of 12 (42%) recovered; and Miller reported that 2 out of 12 (16.6%) recovered.

Persistent Tubo-Ovarial Abscesses.—Occasionally a patient is seen with persistently large, fluctuant, tense, tender adnexal masses that remain unchanged or even grow larger despite palliative measures. Here the danger of rupture is constant. Those masses that do not rupture often require months and months of treatment with bed rest before the patient is considered ready for operation. It would seem advisable, as soon as the parametrial induration has become minimal, to approach these masses operatively. If the patient's condition is poor or doubtful and the lower pole of the mass is in the cul-de-sac, the mass may be temporarily drained by posterior colpotomy.

Colon as Causative Factor in Rupture.—In the search for explanation for the cause of spontaneous rupture, it would seem that a restudy of the colon care of patients might be in order. The relationship between the descending colon and sigmoid and the left adnexa and the frequency of rupture in the left side point to this as a factor. It is possible that the use of laxatives after several days of constipation or of cathartics at any time may play a part in these ruptures, especially in the case of left-sided masses. It is of interest to note that 6 of Miller's 42 patients had taken purgatives at or just before the onset of pain. This may have precipitated or aggravated the rupture.

Operative Procedure.—Once the diagnosis of rupture has been made, operation should be immediate. Here quick action is of the essence. Next to the general condition of the patient at the time of operation, immediate operation takes prognostic precedence over all other factors. It seems much more important than the actual operative procedure. Only one of the 7 patients operated on within 12 hours after rupture died, while 7 of the 12 operated on after 12 hours died.

Once the abdomen has been opened, it would appear that the operative procedure depends primarily on the condition of the patient. Five of these patients were dying or in extreme shock when they were operated on, and they of course died. When the condition of the patient permitted, excision of the entire ruptured adnexa with abdominal drainage was used and gave better results from both the immediate and the long-range viewpoint. Those patients on whom this was not done and who survived had to be reoperated on after a long interval of time. In the later group of patients both adnexa and uterus were removed whenever possible, and this is undoubtedly the procedure of choice.

SUMMARY AND CONCLUSIONS

Rupture of tubo-ovarial masses is not rare. It occurs in 3% of tubo-ovarial abscesses. The condition is fatal if not operated on, and operative mortality increases with delay. The operative procedure used depends primarily on the condition of the patient.

It would seem that the possibility of rupture of tubo-ovarial abscess must occupy the mind of the gynecologist and general surgeon to a greater extent than it has in the past. The awareness of such a possibility will increase early diagnosis, and if this is followed by immediate operation there will be an increase in survival rate.

The advisability of prophylactic surgical intervention must be considered more seriously not only to prevent rupture but also, in selected cases, to decrease inordinately long periods of hospitalization. All cases of tubo-ovarial abscesses should be carefully analyzed in an endeavor to establish criteria of impending rupture or the necessity of early intervention.

145 E. 54th St. (22).

---

[5] Sabadini, L.: Traitement des pyo-salpinx rompus en péritoine libre avec péritonite généralisée par la méthode conservatrice (drainage, Mikulicz, conservation des annexes), Presse méd. 40: 1334-1336 (Aug. 31) 1932.

[6] Bonney, C. W.: Spontaneous Rupture of Pyosalpinx into the General Peritoneal Cavity, Producing Acute Diffuse Peritonitis, Surg., Gynec. & Obst. 9: 542, 1909.

[7] Lubke, K. A.: Haufigkeit, Ursache, Prognose und Therapie der rupturierten Adnextumoren, Dissertation, Hamburg, 1924; abstracted, Zentralbl. Gynäk. 43: 2423 (Oct. 24) 1925.

J.A.M.A., Oct. 16, 1954

CLINICAL APPLICATION OF SIMPLIFIED SERUM PROTHROMBIN CONSUMPTION TEST

Leon N. Sussman, M.D., Ira B. Cohen, M.D.
and
Robert Gittler, M.D., New York

The serum prothrombin consumption test, described by Quick,[1] has not been commonly used because of its complicated technique. A simplified method using commercially prepared reagents, described by Wald, Weiner, and Sussman,[2] is now available. The test can easily be performed in any laboratory where plasma prothrombin determinations are done. No single explanation for the coagulation of blood has as yet been generally accepted, nor has unanimity on the matter of terminology been reached; however, practically all of the recently expounded theories by Seeger, Quick, Owren, and Ware are schematically represented in figure 1.

The plasma prothrombin time measures deficiencies of the prothrombin complex. Thus a reduction in prothrombin, either congenital or acquired by the administration of bishydroxycoumarin (Dicumarol) and similar drugs is easily demonstrated. Any reduction in accessory factors (labile factor [3] or Owrens factor 5 [4]) is similarly shown by a long plasma prothrombin time.

The calcium levels are usually not altered sufficiently under physiological conditions to effect the coagulation of blood. However, the removal of calcium by sodium citrate or sodium oxalate is effective in preventing the coagulation of blood for banking purposes or for chemical analysis.

The thromboplastin complex represents the activity of several factors. An extract derived from the breakdown of platelets (perhaps induced by thrombin) [5] and the presence of a globulin factor obtained from plasma combine to form thromboplastin. The plasma fraction has been named antihemophilic globulin and is believed to be missing from the plasma of hemophiliacs. Recently two additional plasma components named plasma thromboplastin component [6] and plasma thromboplastin antecedent [7] have been identified as contributing to this complex. An alternative source of thromboplastin is the extract of injured tissue. This factor may produce errors in the test if the venipuncture is at all traumatic. Several inhibitors and accelerators tend to govern the speed of this reaction at several points. Thus antithrombin prevents the thrombin from potentiating the platelet enzyme. Heparin prevents the activity of the thromboplastin complex, either by acting as an antithrombin or by inhibiting platelet destruction. Specific inhibitors against antihemophiliac globulin have been described, such as anticoagulants.[8] In addition several accelerators have been described, and they maintain the equation in operation.

In normal coagulation the presence of excess thromboplastin complex leads to the almost complete consumption of the prothrombin. Serum obtained after this normal clot has been formed will therefore contain very little prothrombin. In contrast, when coagulation abnormalities occur due to lack of thromboplastin, as in hemophilia or thrombopenia, the prothrombin is not consumed during the process of clotting. Serum from such a clot will contain larger amounts of prothrombin. Thus by determining the residual prothrombin in the serum after clotting under standard conditions one can obtain an idea of the state of the thromboplastin complex. In other words, the determination of the serum prothrombin time, is in reality a quantitative measure of the original thromboplastin.

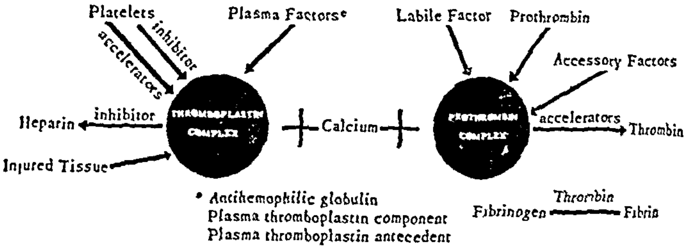


Fig. 1.—Schematic diagram of current theories of blood coagulation process.

TECHNIQUE

Careful attention must be paid to details in technique, as minor variations produce very marked differences in the results obtained.

Preparation of Serum.—Blood is drawn cleanly and allowed to clot at room temperature. The blood is placed in a water bath at 37 C for one hour after clotting. The blood is centrifuged for three minutes, and the serum is separated. Serum may be stored at 4 C for a maximum of 60 minutes before the test.

Preparation of Reagents.—Thromboplastin solution is prepared as for the plasma prothrombin test. Fibrinogen solution is prepared as directed by the manufacturer (to contain 300 mg. per 100 cc. of fibrinogen and 85% of sodium chloride solution). Two cubic centimeters of thromboplastin solution and 1 cc. of fibrinogen solution are mixed just before the test.

From the laboratories and medical service of Beth Israel Hospital.

This study was aided by the Joseph and Helen Yeamans Levy Foundation of Beth Israel Hospital.

1. Quick, A. J.: Studies on the Enigma of the Hemostatic Dysfunction of Hemophilia, Am. J. M. Sc. **214**: 272-280 (Sept.) 1947.
2. Wald, N.; Weiner, M., and Sussman, L. N.: Investigation of Coagulation Defects Using a Modified Prothrombin Consumption Test, read at the Clinical Research Meeting of the New York Academy of Medicine, April 23, 1952, abstracted, Bull. New York Acad. Med. **28**: 609 (Sept.) 1952.
3. Aggeler, P. M., and others: Plasma Thromboplastin Component (PTC) Deficiency: A New Disease Resembling Hemophilia, Proc. Soc. Exper. Biol. & Med. **79**: 692-694 (April) 1952.
4. Owren, P. A.: Parahemophilia: Hemorrhagic Diathesis Due to Absence of a Previously Unknown Clotting Factor, Lancet **1**: 446-448 (April 5) 1947.
5. Quick, A. J.: Physiology and Pathology of Hemostasis, Philadelphia, Lea & Febiger, 1951, p. 31.
6. White, S. G.; Aggeler, P. M., and Glendening, M. B.: Plasma Thromboplastin Component (P.T.C.): Hitherto Unrecognized Blood Coagulation Factor: Case Report of PTC Deficiency, Blood **8**: 101 (Feb.) 1953.
7. Rosenthal, R. L.; Dreskin, O. H., and Rosenthal, N.: New Hemophilia-Like Disease Caused by Deficiency of a Third Plasma Thromboplastin Factor, Proc. Soc. Exper. Biol. & Med. **82**: 171-174 (Jan.) 1953.
8. Dreskin, O. H., and Rosenthal, N.: A Hemophilia-like Disease with Prolonged Coagulation Time and a Circulating Anti-Coagulant, Blood **5**: 46-60 (Jan.) 1950.

Performance of Test.—The mixture of thromboplastin and fibrinogen, in the amount of 0.2 cc., is placed in a test tube in a water bath at 37 C for five minutes. The serum to be tested is warmed in the water bath at 37 C for five minutes. One-tenth cubic centimeter of the serum is blown strongly into the thromboplastin-fibrinogen mixture (the timer should be started simultaneously), and the time for the clot to form is determined as in the plasma prothrombin test.

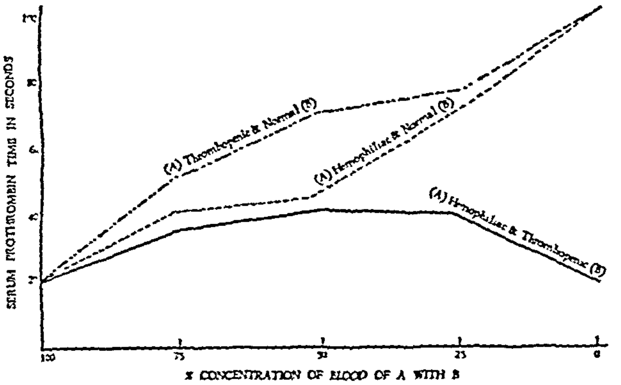


Fig. 2—Effect on serum prothrombin time of mixtures of thrombopenic, hemophiliac, and normal blood.

The clot is formed as a fine web, and the person performing the test should watch carefully for it. There are other precautions to be observed. The serum must be refrigerated at 4 C for a maximum of 60 minutes if it is not used immediately. The thromboplastin and fibrinogen must be mixed just before use. All reagents must be warmed at 37 C for five minutes before use. The test is interpreted as follows: time longer than 30 seconds—normal range; time shorter than 20 seconds—abnormal range; and time between 20 and 30 seconds—doubtful.

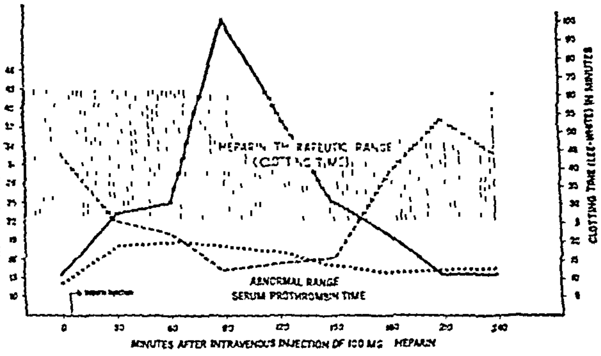


Fig. 3.—Effect of heparin given intravenously on the serum prothrombin time (hyperheparinemia). The solid line shows the clotting time (Lee-White) in minutes; the dotted line, the plasma prothrombin time in seconds; and the broken line, the serum prothrombin time in seconds.

INTERPRETATION

Normal Clotting.—The serum prothrombin time, determined in several hundred normal persons, was longer than 25 seconds. It is important to emphasize the necessity of following the directions for the test carefully, as alteration of the time of incubation produces considerable variation in the results. Thus longer periods of incubation consume more prothrombin, whereas shorter periods use less prothrombin.

Hemorrhagic Diseases.—The interpretation may be varied by the presence of hemorrhagic diseases such as thrombopenia, thrombasthenia, and hemophilia. Determinations performed in patients with thrombopenia, either primary, as in idiopathic thrombopenic purpura and drug thrombopenia, or secondary, as in leukemia and aplastic anemia, have consistently yielded short serum *prothrombin times, indicating poor utilization of prothrombin.* More directly, this means that a lack of platelet "enzyme" results in thromboplastin deficiency, which in turn precludes normal utilization of plasma prothrombin; hence, more prothrombin is found in the serum of such a clot.[9]

The average serum prothrombin consumption time (in seconds) associated with various conditions is given below. These determinations were made in a series of 250 patients.

Postsplenectomy (persistent thrombopenia)	12.7
Thromboasthenia	12.9
Acute granulocytic (myeloid) leukemia	13.2
Thrombocytopenic purpura	14.2
Hemophilia 1	14.7
Hemophilia 2	15.0
Aplastic anemia	18.2
Secondary thrombopenia	20.4
Virus pericarditis	35.0
Infectious mononucleosis	36.0
Carcinoma of the lung	37.0
Coronary occlusion	37.0
Diverticulosis	42.0
Diabetes	42.0
Rheumatoid arthritis	43.0
Hyperthyroidism	46.0
Chronic lymphocytic (lymphatic) leukemia	55.0
Ulcerative colitis	56.0
Renal tuberculosis	58.0
Postoperative herniorrhaphy	62.0
Infectious hepatitis	65.0
Brain tumor	68.0
Carcinoma of the sigmoid	80.0

In a single patient with thrombasthenia, or qualitative platelet defect, a short serum prothrombin time of 12 *seconds indicated poor prothrombin utilization.*[10] Results obtained in several cases of hemophilia and hemophilia-like diseases indicated short serum prothrombin times.[1] This test was originally thought to have diagnostic significance in hemophilia and was the first specific laboratory means for the diagnosis of this disease.[11]

It is likewise of interest to note that the correction of hemophilic defect by normal blood can be shown to be a quantitative correction if one uses the serum prothrombin test as an index rather than the clotting time. Mixtures of hemophilic with normal blood in various proportions are shown in figure 2. Determinations in many of the other hemorrhagic diseases such as parahemophilia, factor 5 (AC globulin) defect, and fibrinogenopenia have not yet been done by the technique herein described.

Anticoagulants.—The administration of heparin in vivo has a profound effect on the coagulation system (fig. 3). A single intravenous injection of 100 mg. of heparin prolonged the clotting time from 10 minutes to

---

[9] Soulier, J. P.: La Consumption de la prothrombine pendant la coagulation du sang veineux et du sang capillaire, Rev. d'hémat. 3: 302-319, 1948.

[10] Sussman, L. N.; Wald, N., and Rosenthal, R. L.: A Hemorrhagic Diathesis Due to a Qualitative Platelet Defect, Blood 7: 1100-1108 (Nov.) 1952.

[11] Quick,[5] p. 143.

90 minutes. At the same time the plasma prothrombin time increased from 13 seconds to 16 seconds, whereas the serum prothrombin time fell from normal of 34 seconds to 12 seconds. Undoubtedly heparin has multiple sites of action on the coagulation system; these results, however, indicate that its major action occurs on the thromboplastin complex. Most probably the antithrombin action of heparin prevents the labilization of platelets as suggested by Quick.[12]

In contrast to the above, the anticoagulant action of those drugs that produce hypoprothrombinemia, such as bishydroxycoumarin, have no effect on the serum prothrombin consumption (fig. 4). In explanation of this it can be said that regardless of the initial lack of plasma prothrombin the residual serum prothrombin will still remain low, and therefore the serum prothrombin time will be normal or prolonged. This lends emphasis to the concept that if the thromboplastin complex is normal, the serum prothrombin time will be normal, regardless of the state of the prothrombin complex.

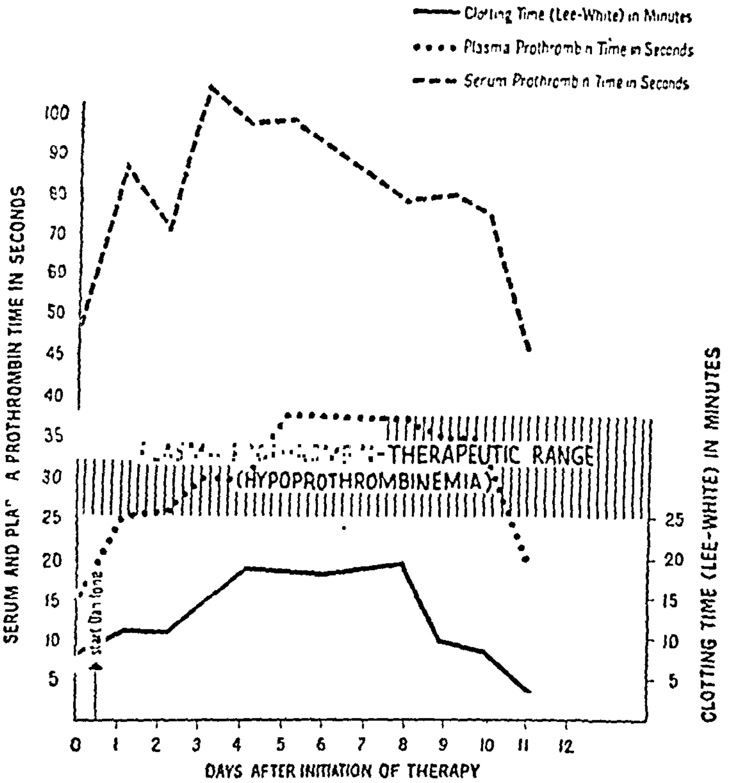


Fig. 4.—Effect of phenindione (Danilone)-induced hypoprothrombinemia on the serum prothrombin time.

Study of Correction of Hemorrhagic Defects.—The clotting time determination as an index of the correction of hemophilia defects has erroneously implied that the action was enzymatic (fig. 2). Minimal quantities of normal blood were credited with complete restoration of hemophilic blood to normal clotting time. The use of the serum prothrombin consumption test shows that the correction is quantitative and stoichiometric. A mixture of 75% of hemophilic blood with 25% of normal blood shows a partial correction of the abnormal prothrombin consumption. This could be increased by a 50-50 mixture and further restored to normal by a 25-75 mixture. The correction in the thrombopenias was likewise a quantitative one. An interesting type of curve is obtained by the mixture of thrombopenic and hemophilic blood when a quantitative correction of a dissimilar defect shows a peak correction at 50-50 mixture.

Effects of Steroids.—The usual indictment of new drugs, especially corticotropin (ACTH) and cortisone, as the causative agents in the apparently increasing incidence of thrombophlebitis suggested the study of their effect on the coagulation system. Several cases were studied. No alteration in the coagulation time (Lee-White), the plasma prothrombin time, or in the serum prothrombin consumption time was noted. The effects these drugs may have on production of thrombosis is certainly not measurable by any of the usual hematological techniques.

Study of Platelet Abnormalities.—The study of abnormalities of platelets, both quantitative and qualitative, is aided by this test. Reference has already been made to a qualitative defect of platelets with abnormal serum prothrombin consumption time.[10] Recently an additional example of qualitative platelet abnormality not associated with a serum prothrombin consumption defect [13] was reported. The separation of the several functions of platelets permits a better understanding of their role in the coagulation mechanism.

The following case illustrates the usefulness of the serum prothrombin consumption test in differential diagnosis and demonstrates again its value in understanding platelet physiology.

A 74-year-old man was admitted to the service of Dr. Milton Kissin with the diagnosis of posterior wall myocardial infarction and auricular fibrillation. Anticoagulant therapy with bishydroxycoumarin was started on the patient's admission, and within 48 hours therapeutic levels of prothrombin were attained. At the same time quinidine sulfate, 0.2 gm., was given orally every two hours, and this resulted in restoration of regular sinus rhythm after three doses. A daily maintenance dosage of quinidine was then continued. After one week of anticoagulant therapy a profuse epistaxis occurred, which resisted local therapy with packing epinephrine (Adrenalin), absorbable gelatin sponge (Gelfoam), and thrombin. At this time the prothrombin time was 23.7 seconds (normal, 14.2 seconds). The administration of vitamin K_1 and fresh transfusions restored the prothrombin time to normal; nevertheless, the epistaxis persisted. Hematuria and a positive capillary fragility test were noted. At this time the prothrombin time was normal, the Lee-White clotting time was 10 minutes, and the platelet count was 125,000 platelets per cubic millimeter. The serum prothrombin consumption time was 13 seconds, representing no consumption of prothrombin. The evidence clearly indicated that the hemorrhagic phenomena were due to an abnormality of the thromboplastin complex and not of the prothrombin complex. Quinidine was promptly suspected, and the use of the drug was discontinued. The next two days the bleeding time was more than 20 minutes. The platelet count was 40,000 per cubic millimeter, and the serum prothrombin consumption test showed no prothrombin consumption (repeated serum prothrombin consumption test was 13 seconds). A rapid clinical and laboratory improvement followed the cessation of the quinidine medication. In five days the platelet count was 230,000 per cubic millimeter, and the serum prothrombin consumption time was normal or more (25 seconds). In this case the fall in the serum prothrombin consumption time preceded by several days the significant fall in platelets. The serum prothrombin consumption time abnormality focused attention on the thromboplastin complex rather than on prothrombin as the cause of bleeding. Since the platelet depressant action of quinidine is well known, the true toxic agent in this unusual hemorrhagic episode was quickly exposed by the serum prothrombin consumption test.

---

[12] Quick,[8] p. 159.

[13] de Vries, A.; Shafrir, E.; Efrati, P., and Shamir, Z.: Thrombocytopathic Purpura with Normal Prothrombin Consumption: Hemorrhagic Diathesis Due to a Partial Platelet Dysfunction, Blood 8: 1000 (Nov.) 1953.

SUMMARY

A simplified serum prothrombin consumption test can be done in any laboratory equipped to find prothrombin times. This test can be of aid in the discovery and understanding of coagulation defects, in that it provides a single means of measuring the thromboplastin activity of the blood. The usefulness of the serum prothrombin consumption test in determining the functional activity of the platelets is demonstrated. Considerable more research in varied clinical conditions is needed in order to fully explore its possibilities and to understand the action of various drugs on the coagulation system.

36 E. 38th St. (16) (Dr. Sussman).

CLINICAL NOTES

HEMANGIOMA OF THE SMALL INTESTINE CAUSING ANEMIA OF TEN YEARS' DURATION

Jerry Goldfarb, M.D., Stamford, Conn.
John M. Gould, M.D.
and
Gerald S. Eichner, M.D., Bronx, N. Y.

Hemangioma of the small intestine is a rare condition that is usually diagnosed at surgery or autopsy. We are reporting a case that is of additional interest because the lesion gave rise to a chronic anemia originally diagnosed as a hypoplastic anemia due to previous ingestion of quinacrine (Atabrine) hydrochloride.

REPORT OF A CASE

A 32-year-old white male clerk was admitted to the Bronx Veterans Administration Hospital for the sixth time on Sept. 25, 1953, complaining of weakness, dizziness, headache, and pallor. His present illness dated back to 1943, when he was in the Army, stationed in Corsica. At that time easy fatigability, weakness, and pallor developed, and the patient was hospitalized with a moderately severe anemia. For the preceding six months the patient had erroneously been taking six tablets of quinacrine daily instead of the usual prophylactic dose of one tablet. The patient was treated with liver and iron, with some improvement, and was returned to duty. While still in the service he was rehospitalized on two occasions because of anemia; each time he was treated with liver and iron, with improvement. He was relatively well when discharged from the Army in 1945, although he was still easily fatigued. In 1946, he again developed progressively severe symptoms of anemia, and from 1946 to 1949 he received frequent courses of liver and iron from his private physician, with some diminution in his symptoms. The patient had never noted any gross rectal hemorrhage or melena.

Because of the persistence of the symptoms of anemia, he was admitted to the Bronx Veterans Administration Hospital for the first time on March 14, 1949. Physical examination revealed no abnormalities except for marked pallor. The hemoglobin level was 6.4 gm. per 100 cc. Red blood cell count was 3,400,000 per cubic millimeter; anisocytosis, poikilocytosis, and hypochromia were noted. Reticulocyte count was 1%. White blood cell count, differential, platelet count, bleeding time, clotting time, and clot retraction time were normal. Red blood cell fragility was normal. Gastric analysis revealed 74 units of free hydrochloric acid after histamine. Urinalysis was negative. Urine urobilinogen [illegible] bilirubin were normal. Bone marrow aspirations from both the sternum and the vertebral spinal process were hypocellular with normal differentials. Twelve stool specimens were negative for occult blood. A bone survey, gastrointestinal studies, small intestine series, and barium enema were interpreted as normal. The patient was given a course of liver intramuscularly and a course of iron, with no hematological response. (Upon checking the records of this admission, it was noted that the dosage of iron used was insufficient to expect a therapeutic response.) The patient was given blood transfusions until the hemoglobin level reached normal, and was discharged on June 1, 1949. The final diagnosis was hypoplastic anemia secondary to quinacrine intoxication. This diagnosis was based on the history of prolonged, excessive intake of quinacrine hydrochloride, the failure to demonstrate any blood loss, the hypocellular bone marrow, and the apparent failure to respond to liver or iron.

The patient did well until September, 1950, when he again noted the onset of fatigue, headache, dizziness, and shortness of breath. These symptoms were progressive in severity, and he was rehospitalized on Feb. 28, 1951. Careful questioning failed to elicit any history of blood loss. Physical examination again revealed only striking pallor. Hemoglobin was 4.6 gm. per 100 cc.; red blood cell count 2,300,000 per cubic millimeter, white blood cell count and differential normal, and reticulocyte count 1%. Direct and indirect Coombs' tests were negative. No stools were tested for occult blood. Bone marrow aspiration revealed a slightly hypocellular marrow with normal distribution of cells. The patient was given 1,500 cc. of blood; his hemoglobin level rose to 13 gm. per 100 cc., and the red blood cell count rose to 4,800,000 per cubic millimeter. The patient was discharged April 20, 1951, with the diagnosis of hypoplastic anemia.

He did well until June, 1952, when he had a return of his previous symptoms; he was rehospitalized on June 9, 1952, with a hemoglobin level of 7.4 gm. per 100 cc. and a red blood cell count of 3,300,000 per cubic millimeter. The bone marrow was again slightly hypocellular. One stool specimen was moderately positive with guaiac; three others were negative. The patient was given 2,000 cc. of blood, with a rise in the hemoglobin level to 13.8 gm. per 100 cc., and was discharged on June 30, 1952.

He was readmitted for the fourth time on Nov. 12, 1952, with his usual symptoms of anemia. Admission tests revealed the following values: hemoglobin 4.7 gm. per 100 cc., red blood cell count 2,500,000 per cubic millimeter, and reticulocyte count 0.6%. One stool was tested for occult blood and was negative. For the first time bone marrow was interpreted as being slightly hyperplastic with some erythroid hyperplasia. Because of this finding, extensive studies were done to rule out a hemolytic disorder, but the studies were all normal. The patient was given 2,000 cc. of blood, and his hemoglobin level rose to 11.1 gm. per 100 cc.

He was readmitted for the fifth time on March 9, 1953. Hemoglobin was 9.7 gm. per 100 cc., red blood cell count 3,280,000 per cubic millimeter, white blood cell count and differential normal. Reticulocyte count was 2.3%. A bone marrow aspiration revealed a normocellular marrow. The patient was followed over a 10 day period, and the reticulocyte count was found to vary from 0.6 to 2.2%. He was then started on ferrous sulfate, 1.8 gm. daily, and within a five day period a reticulocyte response of 10% was noted. Repeated stool specimens were strongly positive for occult blood. An esophagram was made, and gastrointestinal series and barium enema studies with air contrast were performed; no abnormalities were found. Examinations were made with proctoscope and gastroscope, but no pathological findings were noted. With iron alone, the hemoglobin level rose to 13.6 gm. per 100 cc., and the red blood cell count rose to 4,380,000 per cubic millimeter. The patient was discharged on June 10, 1953, with the diagnosis of gastrointestinal bleeding, site unknown. He was advised to continue taking ferrous sulfate; however, he discontinued this because of gastrointestinal distress. He felt well until August, 1953, when his usual symptoms of anemia recurred, without any gross evidence of gastrointestinal bleeding.

From the Bronx Veterans Administration Hospital, medical, surgical, and laboratory services.

90 minutes. At the same time the plasma prothrombin time increased from 13 seconds to 16 seconds, whereas the serum prothrombin time fell from normal of 34 seconds to 12 seconds. Undoubtedly heparin has multiple sites of action on the coagulation system; these results, however, indicate that its major action occurs on the thromboplastin complex. Most probably the antithrombin action of heparin prevents the labilization of platelets as suggested by Quick.[12]

In contrast to the above, the anticoagulant action of those drugs that produce hypoprothrombinemia, such as bishydroxycoumarin, have no effect on the serum prothrombin consumption (fig. 4). In explanation of this it can be said that regardless of the initial lack of plasma prothrombin the residual serum prothrombin will still remain low, and therefore the serum prothrombin time will be normal or prolonged. This lends emphasis to the concept that if the thromboplastin complex is normal, the serum prothrombin time will be normal, regardless of the state of the prothrombin complex.

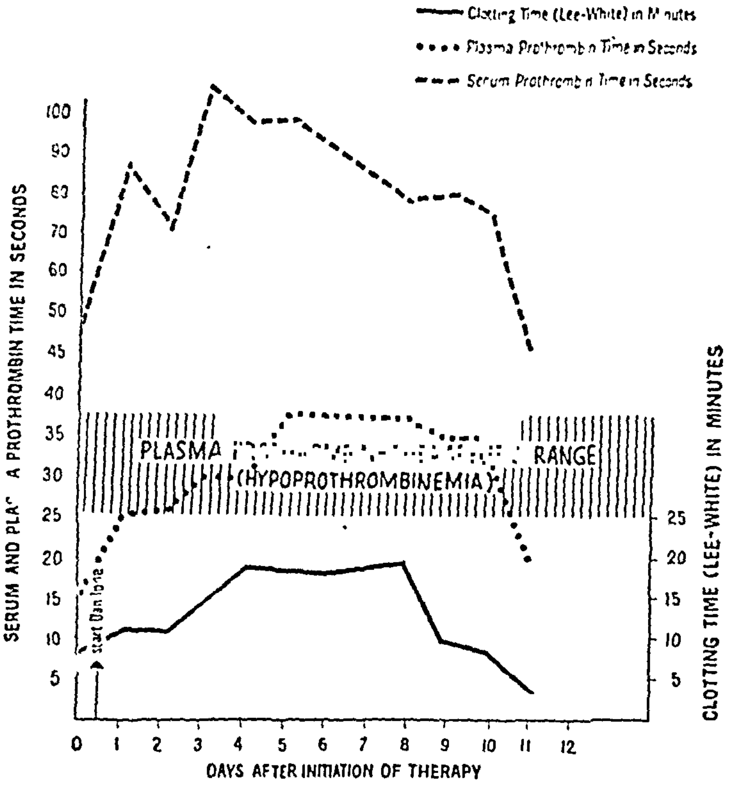


Fig. 4.—Effect of phenindione (Danilone)-induced hypoprothrombinemia on the serum prothrombin time.

Study of Correction of Hemorrhagic Defects.—The clotting time determination as an index of the correction of hemophilia defects has erroneously implied that the action was enzymatic (fig. 2). Minimal quantities of normal blood were credited with complete restoration of hemophilic blood to normal clotting time. The use of the serum prothrombin consumption test shows that the correction is quantitative and stoichiometric. A mixture of 75% of hemophilic blood with 25% of normal blood shows a partial correction of the abnormal prothrombin consumption. This could be increased by a 50-50 mixture and further restored to normal by a 25-75 mixture. The correction in the thrombopenias was likewise a quantitative one. An interesting type of curve is obtained by the mixture of thrombopenic and hemophilic blood when a quantitative correction of a dissimilar defect shows a peak correction at 50-50 mixture.

Effects of Steroids.—The usual indictment of new drugs, especially corticotropin (ACTH) and cortisone, as the causative agents in the apparently increasing incidence of thrombophlebitis suggested the study of their effect on the coagulation system. Several cases were studied. No alteration in the coagulation time (Lee-White), the plasma prothrombin time, or in the serum prothrombin consumption time was noted. The effects these drugs may have on production of thrombosis is certainly not measurable by any of the usual hematological techniques.

Study of Platelet Abnormalities.—The study of abnormalities of platelets, both quantitative and qualitative, is aided by this test. Reference has already been made to a qualitative defect of platelets with abnormal serum prothrombin consumption time.[10] Recently an additional example of qualitative platelet abnormality not associated with a serum prothrombin consumption defect[13] was reported. The separation of the several functions of platelets permits a better understanding of their role in the coagulation mechanism.

The following case illustrates the usefulness of the serum prothrombin consumption test in differential diagnosis and demonstrates again its value in understanding platelet physiology.

A 74-year-old man was admitted to the service of Dr. Milton Kissin with the diagnosis of posterior wall myocardial infarction and auricular fibrillation. Anticoagulant therapy with bishydroxycoumarin was started on the patient's admission, and within 48 hours therapeutic levels of prothrombin were attained. At the same time quinidine sulfate, 0.2 gm., was given orally every two hours, and this resulted in restoration of regular sinus rhythm after three doses. A daily maintenance dosage of quinidine was then continued. After one week of anticoagulant therapy a profuse epistaxis occurred, which resisted local therapy with packing epinephrine (Adrenalin), absorbable gelatin sponge (Gelfoam), and thrombin. At this time the prothrombin time was 23.7 seconds (normal, 14.2 seconds). The administration of vitamin K_1 and fresh transfusions restored the prothrombin time to normal; nevertheless, the epistaxis persisted. Hematuria and a positive capillary fragility test were noted. At this time the prothrombin time was normal, the Lee-White clotting time was 10 minutes, and the platelet count was 125,000 platelets per cubic millimeter. The serum prothrombin consumption time was 13 seconds, representing no consumption of prothrombin. The evidence clearly indicated that the hemorrhagic phenomena were due to an abnormality of the thromboplastin complex and not of the prothrombin complex. Quinidine was promptly suspected, and the use of the drug was discontinued. The next two days the bleeding time was more than 20 minutes. The platelet count was 40,000 per cubic millimeter, and the serum prothrombin consumption test showed no prothrombin consumption (repeated serum prothrombin consumption test was 13 seconds). A rapid clinical and laboratory improvement followed the cessation of the quinidine medication. In five days the platelet count was 230,000 per cubic millimeter, and the serum prothrombin consumption time was normal or more (25 seconds). In this case the fall in the serum prothrombin consumption time preceded by several days the significant fall in platelets. The serum prothrombin consumption time abnormality focused attention on the thromboplastin complex rather than on prothrombin as the cause of bleeding. Since the platelet depressant action of quinidine is well known, the true toxic agent in this unusual hemorrhagic episode was quickly exposed by the serum prothrombin consumption test.

---

[12] Quick,[5] p. 159.

[13] de Vries, A.; Shafrir, E.; Efrati, P., and Shamir, Z.: Thrombocytopathic Purpura with Normal Prothrombin Consumption: Hemorrhagic Diathesis Due to a Partial Platelet Dysfunction, Blood 8: 1000 (Nov.) 1953.

SUMMARY

A simplified serum prothrombin consumption test can be done in any laboratory equipped to find prothrombin times. This test can be of aid in the discovery and understanding of coagulation defects, in that it provides a single

aspirations from both the sternum and the vertebral spinal process were hypocellular with normal differentials Twelve stool specimens were negative for occult blood. A bone survey, gastrointestinal studies, small intestine series, and barium enema were interpreted as normal. The patient was given a course of liver intramuscularly and a course of iron, with no hematological response. (Upon checking the records of this admission, it was

90 minutes. At the same time the plasma prothrombin time increased from 13 seconds to 16 seconds, whereas the serum prothrombin time fell from normal of 34 seconds to 12 seconds. Undoubtedly heparin has multiple sites of action on the coagulation system; these results, however, indicate that its major action occurs on the thromboplastin complex. Most probably the antithrombin action of heparin prevents the labilization of platelets as suggested by Quick.[12]

In contrast to the above, the anticoagulant action of those drugs that produce hypoprothrombinemia, such as bishydroxycoumarin, have no effect on the serum prothrombin consumption (fig. 4). In explanation of this it can be said that regardless of the initial lack of plasma prothrombin the residual serum prothrombin will still remain low, and therefore the serum prothrombin time will be normal or prolonged. This lends emphasis to the concept that if the thromboplastin complex is normal, the serum prothrombin time will be normal, regardless of the state of the prothrombin complex.

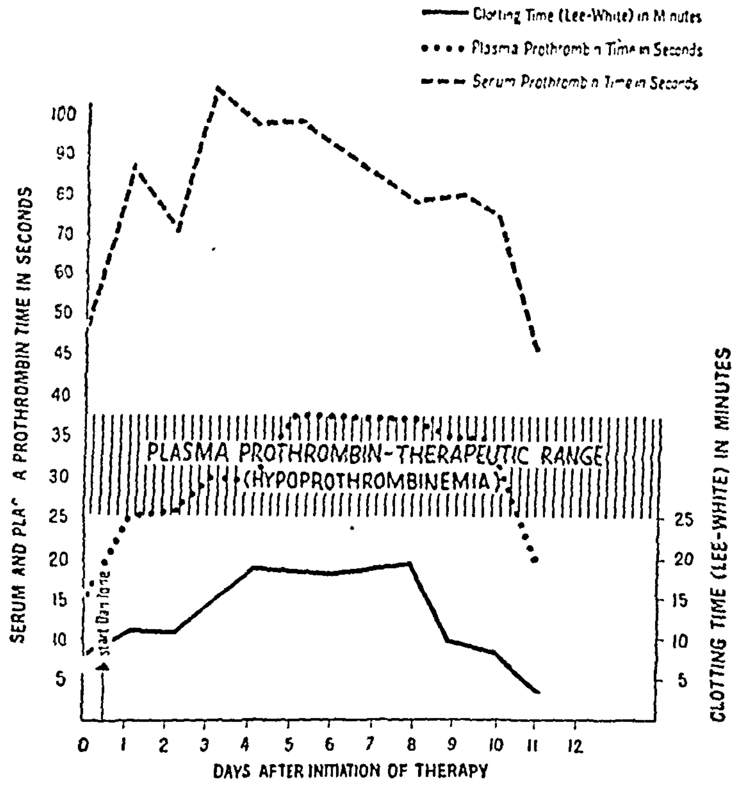


Fig. 4.—Effect of phenindione (Danilone)-induced hypoprothrombinemia on the serum prothrombin time.

Study of Correction of Hemorrhagic Defects.—The clotting time determination as an index of the correction of hemophilia defects has erroneously implied that the action was enzymatic (fig. 2). Minimal quantities of normal blood were credited with complete restoration of hemophilic blood to normal clotting time. The use of the serum prothrombin consumption test shows that the correction is quantitative and stoichiometric. A mixture of 75% of hemophilic blood with 25% of normal blood shows a partial correction of the abnormal prothrombin consumption. This could be increased by a 50-50 mixture and further restored to normal by a 25-75 mixture. The correction in the thrombopenias was likewise a quantitative one. An interesting type of curve is obtained by the mixture of thrombopenic and hemophilic blood when a quantitative correction of a dissimilar defect shows a peak correction at 50-50 mixture.

Effects of Steroids.—The usual indictment of new drugs, especially corticotropin (ACTH) and cortisone, as the causative agents in the apparently increasing incidence of thrombophlebitis suggested the study of their effect on the coagulation system. Several cases were studied. No alteration in the coagulation time (Lee-White), the plasma prothrombin time, or in the serum prothrombin consumption time was noted. The effects these drugs may have on production of thrombosis is certainly not measurable by any of the usual hematological techniques.

Study of Platelet Abnormalities.—The study of abnormalities of platelets, both quantitative and qualitative, is aided by this test. Reference has already been made to a qualitative defect of platelets with abnormal serum prothrombin consumption time.[10] Recently an additional example of qualitative platelet abnormality not associated with a serum prothrombin consumption defect[13] was reported. The separation of the several functions of platelets permits a better understanding of their role in the coagulation mechanism.

The following case illustrates the usefulness of the serum prothrombin consumption test in differential diagnosis and demonstrates again its value in understanding platelet physiology.

A 74-year-old man was admitted to the service of Dr. Milton Kissin with the diagnosis of posterior wall myocardial infarction and auricular fibrillation. Anticoagulant therapy with bishydroxycoumarin was started on the patient's admission, and within 48 hours therapeutic levels of prothrombin were attained. At the same time quinidine sulfate, 0.2 gm., was given orally every two hours, and this resulted in restoration of regular sinus rhythm after three doses. A daily maintenance dosage of quinidine was then continued. After one week of anticoagulant therapy a profuse epistaxis occurred, which resisted local therapy with packing epinephrine (Adrenalin), absorbable gelatin sponge (Gelfoam), and thrombin. At this time the prothrombin time was 23.7 seconds (normal, 14.2 seconds). The administration of vitamin K_1 and fresh transfusions restored the prothrombin time to normal; nevertheless, the epistaxis persisted. Hematuria and a positive capillary fragility test were noted. At this time the prothrombin time was normal, the Lee-White clotting time was 10 minutes, and the platelet count was 125,000 platelets per cubic millimeter. The serum prothrombin consumption time was 13 seconds, representing no consumption of prothrombin. The evidence clearly indicated that the hemorrhagic phenomena were due to an abnormality of the thromboplastin complex and not of the prothrombin complex. Quinidine was promptly suspected, and the use of the drug was discontinued. The next two days the bleeding time was more than 20 minutes. The platelet count was 40,000 per cubic millimeter, and the serum prothrombin consumption test showed no prothrombin consumption (repeated serum prothrombin consumption test was 13 seconds). A rapid clinical and laboratory improvement followed the cessation of the quinidine medication. In five days the platelet count was 230,000 per cubic millimeter, and the serum prothrombin consumption time was normal or more (25 seconds). In this case the fall in the serum prothrombin consumption time preceded by several days the significant fall in platelets. The serum prothrombin consumption time abnormality focused attention on the thromboplastin complex rather than on prothrombin as the cause of bleeding. Since the platelet depressant action of quinidine is well known, the true toxic agent in this unusual hemorrhagic episode was quickly exposed by the serum prothrombin consumption test.

---

[12] Quick,[5] p. 159.

[13] de Vries, A.; [illegible] Shamir, Z.: Thrombocytopathic Purpura [illegible]: Hemorrhagic Diathesis Due to a Partial Platelet Dysfunction, Blood 8:1000 (Nov.) 1953.

of operation is not recommended, but it may be used if no more suitable amplifier is available. The requirement for the loudspeaker is that the impedance of its voice coil must match the impedance of the output transformer of the amplifier. It is recommended that the selection and assembly of the various electrical components of this apparatus be referred to a competent electronics technician.

Fig. 2.—Telephone speaking unit, used as a microphone, in position at the exhalation valve of the anesthesia system.

COMMENT

The amplifying apparatus proved valuable in making audible the character and fine detail of the respirations of anesthetized or comatose patients. Not only did it facilitate the administration of anesthetics, but it proved surprisingly reassuring to those surgeons who habitually ask during an operation, "How's the patient doing?" Manipulation of the volume control enabled the respirations to be heard by the entire surgical [illegible] anesthesiologist only. The method was especially useful in prolonged anesthesias for procedures such as radical neck dissections, radical mastectomies, and thyroid, brain, and intestinal operations.

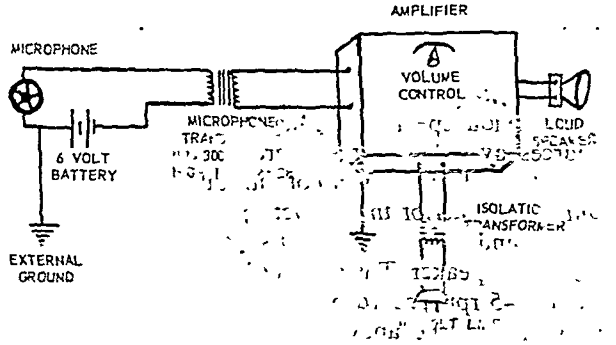


Fig. 3.—Diagram of the components and [illegible] used for amplifying respiratory sounds.

730 Ashburton St. (16) (Dr. [illegible]man).

RENAL PAPILLARY NECROSIS

REPORT OF A CASE

Edwin E. Goldberg, M.D.
Harold B. Shrifter, M.D.
and
William Saphir, M.D., Chicago

Scant attention has been paid to the entity of renal papillary necrosis since it was first described by von Friedreich in 1877.[1] It was not until 1937 that considerable interest in this condition was aroused when Gunther[2] pointed to the frequent association of renal papillitis with diabetes mellitus. Until January of 1953, 180 cases had been published and of these only 10% lacked evidence of either diabetes or obstructive uropathy, or both.[3] It is estimated that one-fifth of all diabetics have acute renal infection terminally, and that of these about one-fourth have renal papillary necrosis.[4] It appears, therefore, that the association of papillary necrosis with diabetes, obstructive uropathies, and renal infections is a not uncommon clinical entity. However, it does not seem to be sufficiently appreciated that papillary necrosis can constitute a fatal complication of diabetic coma and that its presence should be suspected in diabetic coma not responding to adequate therapy. It is for this reason that the following case is presented.

A white man about 68 years of age was admitted to the medical ward of the Cook County Hospital July 16, 1953, with a diagnosis of dehydration, malnutrition, and possible malignant lesion. The patient was stuporous and unable to answer questions; no history could be obtained. Physical examination revealed an emaciated chronically ill looking patient, lying semicomatose in bed. He responded to loud shouting and painful stimuli, but resisted physical examination. The blood pressure was 130 systolic and 60 diastolic, the pulse rate was 96 per minute, the pulse was regular, and the respiratory rate was 24 and Kussmaul in nature. The temperature was 102 F. The eyes were sunken, the pupils contracted and without accommodation to light. The tongue and the mucous membranes of the oropharynx were dry and deeply red. The patient resisted neck movements, but there were no signs of rigidity. Kernig's and Brudzinski's signs were negative. There was no lymphadenopathy. The chest was hyperresonant, breath sounds were diminished throughout, and scattered soft rales were heard over both bases of lungs. The heart did not appear enlarged, the sounds were distant and regular, there was a soft systolic apical murmur, and there was accentuation of the second aortic sound. The abdomen was scaphoid and soft; no organs or masses were palpable. Neurological examination was essentially normal. Tendon reflexes were elicited. There was no edema of extremities. Urine obtained by catheterization revealed a 4+ sugar and a 3+ acetone reaction as well as large numbers of both leukocytes and erythrocytes per high power field. Blood drawn upon admission had the following values: glucose 692 mg. per 100 cc., [illegible] 5.04 mEq. per liter, sodium 144 mEq. per liter, nonprotein nitrogen [illegible] mg. per 100 cc. The diagnosis of diabetic

---

From the Department of Internal Medicine and Pathology, Cook County Hospital.

[1] Von Friedreich, N.: Ueber Necrose der Nierenpapillen bei Hydronephrose, Arch. f. path. Anat. 69: 308-312, 1877.

[2] Gunther, G. W.: Die Papillennekrosen der Niere bei Diabetes, München. med. Wchnschr. 84: 1695-1699, 1937.

[3] Mandel, E. E.: Renal Medullary Necrosis, A. M. A. Arch. Int. Med. [illegible] (April) 1953.

[4] Edmondson, H. A.; Martin, H. E., and Evans, N.: Necrosis of Renal Papillae and Acute Pyelonephritis in Diabetes Mellitus, A. M. A. Arch. Int. Med. 79: 148-175 (Feb.) 1947. Robbins, S. L.; Mallory, G. K., and Kinney, T. D.: Necrotizing Renal Papillitis: A Form of Acute Pyelonephritis, New England J. Med. 235: 885-893, 1946.

three of the proximal, and occasionally the distal, interphalangeal joints of both hands. Involvement of the proximal joint of the great toe and, sometimes, the first metatarsal joint has been an occasional associated finding. Dessecker was the first to describe the histological pathology of such a case as being that of an aseptic necrosis. He thus confirmed the roentgenologic impression. The involved epiphyses are compressed and split, especially in their central portions. As a result of the absorption of bony fragments, irregular defects occur that may assume such proportions that only a small fraction of the margin and irregular islets of bone in the center remain intact within the bony epiphyses. The epiphysis and metaphysis are widened. The phalanx is retarded in growth. The joint space is not narrowed but may be irregular; the joint capsule is moderately thickened. Toward the end of puberty the epiphysis regenerates and, at the normal time, joins with the metaphysis. The end-result is a moderate thickening of the epiphysis and metaphysis and a slight shortening of the phalanx. According to pedigrees published by Ryffel,[10] Heise,[11] Sylvest,[12] and Trippel,[13] there is a dominant mode of inheritance with strong penetrance. Ryffel described two or three proved cases in one generation and two suspicious cases in the preceding generation. In one instance, a case of Perthes' disease of the right femoral head was observed in a 5-year-old boy; five years later this patient had Thiemann's disease of both hands. McComas [14] and Stephens and Kerby [15] described familial Legg-Calvé-Perthes' disease; in one family 28 of 88 persons in five generations were affected. The trait behaved genetically as a simple dominant with variable expressivity.[15]

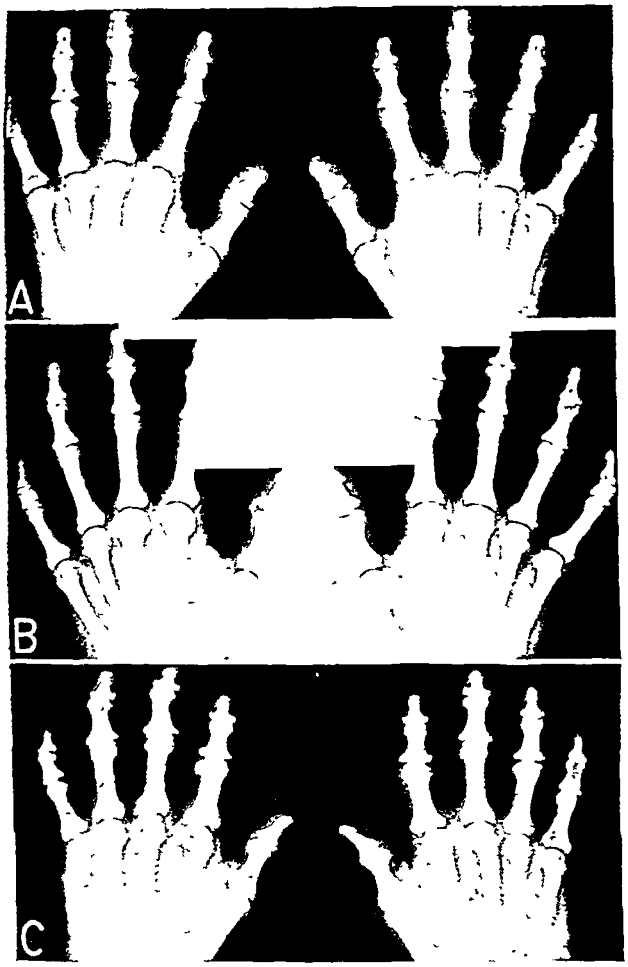


Fig. 3.—Roentgenograms of hands of relatives of the patient in the case reported on, showing similar deformities. *A*, mother of the patient. *B* and *C*, maternal aunts of the patient.

As in the previously reported cases, the one patient that I had an opportunity to study thoroughly had no other clinical, biochemical, endocrine, or constitutional anomalies or abnormalities. The age of onset in my cases was about 15, which corresponds well to the published cases, in which the disease started at ages 14 to 20. Of the patients in my series of cases 11 are female and 6 male, and the sex of one is unknown. According to Brailsford, this process has been found more commonly in males. A detailed discussion of the roentgen findings will be published elsewhere.

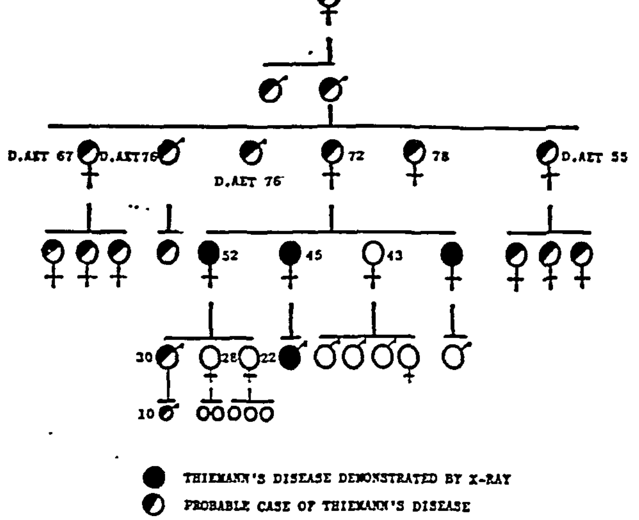

D.AET 67
D.AET 76
D.AET 76
72
78
D.AET 55
52
45
43
30
28
22
10
THIEMANN'S DISEASE DEMONSTRATED BY X-RAY
PROBABLE CASE OF THIEMANN'S DISEASE

Fig. 4.—Diagram of six generations of one family, showing incidence of avascular necrosis of the phalanges of the fingers.

SUMMARY

Four probable and 18 possible cases of avascular necrosis of the phalanges of the fingers (Thiemann's disease) occurred in members of six generations of one family. The condition produces a fusiform swelling of the metacarpophalangeal and proximal and distal interphalangeal joints and shortening of the distal phalanx. The onset in each patient was between the ages of 10 and 15 and was manifested initially by slight pain. This disorder has resulted in no marked constitutional symptoms and very little incapacity.

2290 Sixth Ave.

---

10. Ryffel, H.: Zur Thiemannschen Epiphysenerkrankung, Röntgenpraxis 5: 423-432, 1933.

11. Heise, A: Familaer optraeden af Fleischner's sygdom, Dansk Rad. Selsk. 45, 1932; cited by Schinz, H. R., and others: Roentgen-Diagnostics, New York, Grune & Stratton, Inc, 1951, vol. 1, p. 736.

12. Sylvest, O.: Case of Pterygium Colli Combined with Thiemann-Fleischner Disease and Abnormality of Patella, Ugesk. læger 102: 1270-1272, 1940.

13. Trippel, J. G.: Eine Sippe mit Thiemannscher Erkrankung, Helvet. med. acta 17: 59-78, 1950.

14. McComas, E.: Perthes' Disease and Its Occurrence as Familial Condition, M. J. Australia 2: 584-585, 1946.

15. Stephens, F. E., and Kerby, J. P.: Hereditary Legg-Calvé-Perthes' Disease, J. Hered. 37: 153-160, 1946.

and Graziansky[8] have described six cases that they called multiple osteochondropathy of the phalanges of the fingers. Brailsford[9] described one case that was submitted to him by Davidson. This is a report of 4 additional cases and 18 suspected cases in six generations of one family.

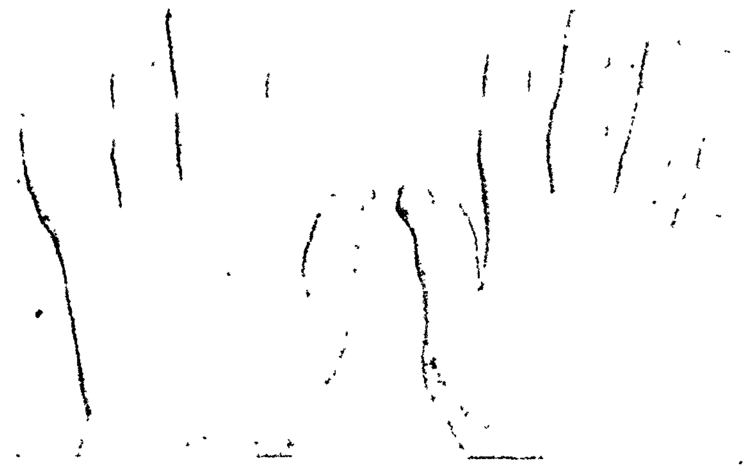


Fig. 1.—Hands of a 20-year-old boy with avascular necrosis of the phalanges (Thiemann's disease). Note enlargement of interphalangeal joints and shortening of fingers.

REPORT OF A CASE

A 20-year-old white boy had been in good health and had had no serious illnesses. At the age of 15 he had begun to have swelling of the proximal and distal interphalangeal joints, associated with occasional slight pain. At the onset only the right middle finger was involved; later, the condition gradually spread to involve the other interphalangeal joints of both hands. At the age of 16 the patient had received eight intramuscular injections from an orthopedic surgeon without apparent effect on his "arthritis." Since the age of 18 he had had some slight swelling and discomfort in the knees. The patient was single; he and his mother were both born and raised in Cleveland; he had worked as a welder and, later, as a photo technician. He used very little alcohol, no tobacco, and no drugs.

Physical examination showed an alert, cooperative, intelligent white boy of average build, in no distress. The weight was about 180 lb. (81.6 kg.). Findings were within normal limits except for moderate, spindling enlargement of the proximal interphalangeal joints (bony ridges) and slight enlargement of the distal interphalangeal joints (fig. 1). Some shortening of the fingers of both hands was present. Complete blood count, sedimentation rate, hematocrit, urinalysis, and routine flocculation test for syphilis were normal. Serum levels were: uric acid, 3.1 mg. per 100 cc.; calcium, 12 mg. per 100 cc.; phosphorus, 2.8 mg. per 100 cc.; total protein, 7.3 gm. per 100 cc.; albumin, 4.2 gm. per 100 cc.; globulin, 3.1 gm. per 100 cc.; alkaline phosphatase, 7.2 Bodansky units per 100 cc.; and protein-bound iodine, 6.3 mcg. per 100 ml. Basal metabolic rate determinations were -21 and -18%. Roentgenograms of the chest, knees, ankles, and feet were not remarkable. Roentgenograms of the hands (fig. 2) revealed that all the metacarpals and phalanges were shortened and broadened, particularly at their ends. This was particularly pronounced in the little finger. The joint spaces were well preserved. There were hypertrophic changes about the proximal interphalangeal and distal interphalangeal joints. There was a moderate soft-tissue swelling about the proximal interphalangeal joints.

Family History.—The patient's mother, age 46, had had the same type of joint disturbance (fig. 3*A*), which also started at the age of 15. She was not bothered by her arthritis and was otherwise in good health. The patient's father, age 54, was well and without bone or joint disease. There were no siblings. The maternal grandmother, age 70, was in good health but had also had similar joint deformities for many years. Roentgenograms of her hands were not obtainable. Two aunts (maternal) gave a similar history of joint disturbances. Roentgenograms of their hands (fig. 3*B* and *C*) are very similar to those of the patient. In six generations, 17 other members of this family are said to have had this condition (fig. 4).

DIFFERENTIAL DIAGNOSIS

Thiemann's disease is differentiated from rheumatoid arthritis by the absence of redness and heat in the involved joints and by the absence of systemic symptoms. The disease is differentiated from osteoarthritis by the joints involved and the early age of onset. The clinical course, history, physical examination, and roentgen and laboratory studies help to differentiate this condition from the acute and chronic infectious arthritides and from the known metabolic and endocrine disorders.

COMMENT

The pathogenesis of aseptic osseous necroses is now understood, though the cause remains unknown. One of the principle types of aseptic, avascular osseous necrosis is an osteochondritis of growing epiphyses. Nearly every secondary epiphysis and many of the primary epiphyses have been observed as a site of an osteochondritis. Each original observer has had his name appended to the diseased epiphysis he described. The pathogenesis and pathology of all the epiphyseal osteochondritides is essentially the same. Many theories have been advanced to explain the cause of this condition, but none have been proved. Trauma, infection, endocrine imbalance, and hereditary constitutional factors have been suggested. A few examples of epiphyses in which aseptic necrosis has been observed are the tibial tubercle (Osgood-Schlatter's disease), the capital epiphysis of the femur (Legg-Calvé-Perthes' disease), and the second metatarsal head (Freiberg's disease). There seems to be no epiphysis that may not be affected by an osteochondritis.

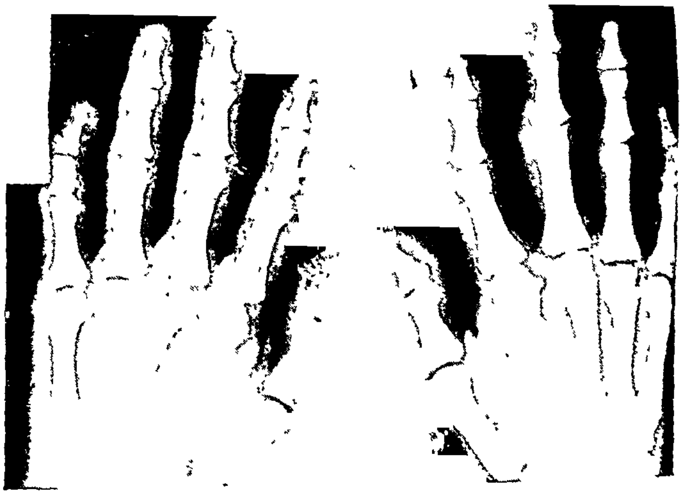


Fig. 2.—Roentgenogram of the hands (fig. 1) of the patient in the case reported on.

Relatively little has been written about osteochondritis of the phalanges of the fingers. Thiemann's first description of the disease noted involvement of two or

---

6. Dessecker, C.: Zur Epiphyseonekrose der Mittelphalangen beider Hände, Deutsche Ztschr. Chir. 229: 327-336, 1930.

7. Fleischner, F.: Multiple Epiphysenstörungen an den Händen: Eine bisher unbekannte Lokalisation der Osteochondropathia juvenilis, Fortschr. Geb. Röntgenstrahlen 31: 206-209, 1923.

8. Reinberg, S. A., and Graziansky, W. P.: Multiple Osteochondropathy of Phalanges of Fingers, Am. J. Roentgenol. 34: 617-628, 1935.

9. Brailsford, J. F.: *Radiology of Bones and Joints*, ed. 4, Baltimore, Williams & Wilkins Company, 1948.

COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION

APPARATUS ACCEPTED

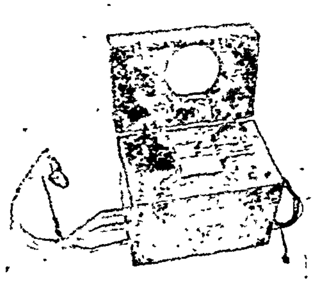
The following additional products have been accepted as conforming to the rules of the Council on Physical Medicine and Rehabilitation of the American Medical Association for inclusion in Apparatus Accepted. A copy of the rules on which the Council bases its action will be sent on application.

RALPH E. DE FOREST, M.D., *Secretary.*

Meta-Basal Portable, Model MB-1

Electro-Physical Laboratories, Inc., 65 Harvard Ave., Stamford, Conn.

The Meta-Basal Portable, Model MB-1, is an apparatus for determining a patient's basal metabolic rate from the time required for the patient to consume a predetermined quantity of oxygen. It is housed in a wooden carrying case and can be set on a table. The initial quantity of oxygen is supplied from small Oxycaps measuring approximately 1.9 cm. (¾ in.) in diameter by 5 cm. (2 in) in length. Each of the Oxycaps supplied is stated to contain an amount of oxygen that, at standard conditions of temperature and pressure, measures very nearly 1,000 cc. The recording apparatus, which uses a special Thermoscribe stick instead of an ink-writing pen, is driven by electricity.



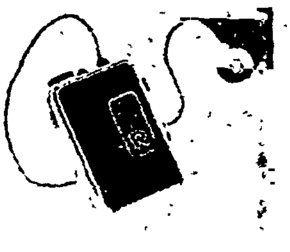
Meta-Basal Portable, Model MB-1

Unpacked, the apparatus measures 38 (height) by 43 by 25 cm. (15 by 17 by 10 in.) and weighs 13.6 kg. (30 lb.). Packed for shipment it measures 47 by 55 by 37 cm. (18½ by 21½ by 14½ in.) and weighs 16.8 kg. (37 lb.). The shipping weight includes two rubber breathing tubes, breathing tube support arm, two rubber mouthpieces, nose clamp, power cable, Oxycap pouch, six Oxycaps, bag of carbon dioxide absorbent, vial Thermoscribe stick, roll of recording paper, spare fuses, spare pilot lamps, rotary calculator, instruction book, and leatherette cover.

The apparatus requires 60 cycle alternating current at 117 volts and draws 35 watts.

Radioear Hearing Aid, Model 820

E. A. Myers & Sons, Inc., 306 Beverly Rd., Pittsburgh 16. Distributor: Radioear Corporation, 306 Beverly Rd., Pittsburgh 16.



Radioear Hearing Aid, Model 820

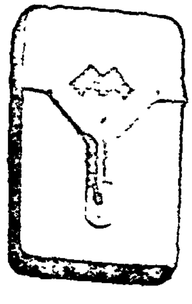
The Radioear Hearing Aid, Model 820, is a tubeless instrument employing three transistors. An unusual feature is its ability to operate one, two, or three mercury-type dry cells, depending on the amplification desired by the user. If less than three cells are used their place is taken either by dummies or by reducers. A dummy is made of translucent substance in the form of a cylinder with an axial conductor of low (negligible) resistance; a reducer resembles a dummy but its axial conductor has a resistance of about 30 ohms. Six combinations are possible (C = cell, R = reducer, D = dummy): CCC, CCR, CCD, CRD, CRR, and CDD. Any given combination of three units is inserted into a tube or cylinder of transparent material and then placed in the instrument. Maximum power is given by the combination CCC. Both air and bone conduction receivers are available, and an inductive pickup element called the Phonemaster is provided for direct telephone reception. The microphone is magnetic.

The body of the instrument, without minor projections, measures 70 by 50 by 22 mm. The amplifier unit without battery weighs 107 gm., the earphone 7.6 gm., the receiver cord 2.5 gm., and the three mercury cells in holder 39 gm., making the total weight 156.1 gm.

Micronic "All American" Hearing Aid

Audivox, Inc., (Successor to Western Electric Hearing Aid Division), 123 Worcester St., Boston 18.

The Micronic "All American" Hearing Aid is a tubeless instrument that contains three transistors. It operates on either one or two mercury cells (1.25 or 2.5 volts). The body of the instrument measures 75 by 47 by 19 mm. and weighs 86.5 gm. The earphone weighs 7.5 gm., the receiver cord 3 gm., and the battery 26 gm., making the total weight 123 gm.

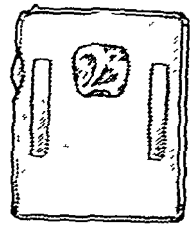


Micronic "All American" Hearing Aid

Microtone Hearing Aid, Model T1 (Red Dot)

The Microtone Corporation, 758 S. Mississippi River Blvd., St. Paul 1.

The Microtone Hearing Aid, Model T1 (Red Dot) is a tubeless instrument employing three transistors and operating on a 1.25 volt mercury cell, or a 1.5 volt dry cell, or a 2.5 volt battery. The latter has two small cells connected in series and in a plastic tube. The apparatus has both tone and volume control. The amplifying portion of the instrument, barring minor projections, measures 75 by 57 by 20 mm. and weighs 131.5 gm. The earphone weighs 8.5 gm., the receiver cord 2.5 gm., and the 2.5 volt battery 32 gm. The total weight is 174.5 gm.



Microtone Hearing Aid, Model T1 (Red Dot)

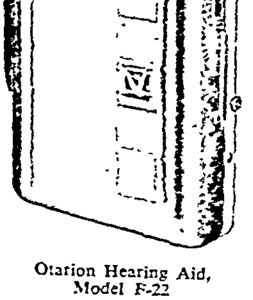
Microtone Hearing Aid, Model T1 (Yellow Dot)

The Microtone Corporation, 758 S. Mississippi River Blvd., St. Paul 1.

The Microtone Hearing Aid, Model T1 (Yellow Dot) is a tubeless instrument. It uses three transistors like Microtone Hearing Aid, Model T1 (Red Dot), but differs in details of wiring that permit it to operate with batteries supplying up to 4 volts (instead of the maximum of 2.5 volts that the Red Dot Model permits). The battery supplied with this instrument has three mercury cells and supplies 4 volts. It can be adjusted as to maximum acoustic output by changing the voltage of the batteries used; in addition, it has a volume and tone control. The body of the instrument measures 75 by 57 by 20 mm. and weighs 126 gm. The earphone weighs 8.3 gm., the receiver cord 2.7 gm., and the battery 40 gm., making the total weight 177 gm.

Otarion Hearing Aid, Model F-22

Otarion, Inc., 185-7 Ashford Ave., Dobbs Ferry, N. Y.



Otarion Hearing Aid, Model F-22

The Otarion Hearing Aid, Model F-22, has two vacuum tubes and one transistor and requires one 1.25 volt mercury cell and one 22.5 volt zinc-carbon battery. The on-off switch is combined with the volume control and operates by dial; the tone control, which is of the lever type, has three settings. The body of the instrument measures 85 by 65 by 24 mm. and weighs 118.5 gm. The earphone weighs 8.2 gm., the receiver cord 2.6 gm., the A-battery 29.4 gm., and the B-battery 31.6 gm., making the total weight 190.3 gm.

In the early treatment of burns the choice of method should be guided by the extent and depth of the burn, the area involved, the age of the patient, the number of patients who must be treated at one time, and, to a certain extent, the experience and preference of the surgeon. The use of newly discovered principles has saved many burned patients who a few years ago would have died.

TRANSCRIBED RADIO PROGRAMS FOR MEDICAL SOCIETIES

The making of electrical transcriptions for radio programs by local medical societies was begun at American Medical Association headquarters in 1943. Previously, the Bureau of Health Education had collected radio scripts from local medical societies and after editing redistributed them for subsequent use in areas where they had not been used. The wartime shortage of physicians spurred the demand for transcribed programs for local medical societies. The first electrical transcriptions were keyed to the medical shortage by the choice of topics under the heading "What to Do Before the Doctor Comes." These were broadcast from Chicago and transcribed "off the line." Additional series were added, and ultimately some of the older series were dropped. A total of 42 series has now been prepared; of these 14 have been discontinued. Two are currently under preparation. These electrical transcription series consist of 13 programs each timed to 14 minutes 30 seconds. The opening and closing announcements, which credit the program to the "local medical society in cooperation with the American Medical Association," can be omitted and a local live announcement substituted. The topics cover the fields of mental hygiene, exercise, athletics, surgery, physical medicine, use of animals in research, drugs, health of the school-age child, physicians' contribution to citizenship, self-help toward medical economic progress, industrial health, heart diseases, summertime health hints, medicine's fight against disease, superstition versus science, and nutrition and diet.

Techniques include interviews with outstanding authorities, dramatizations with summaries by medical specialists, musical interludes with interspersed information, first person documentary, dramatic narration, group forums, and medical narration with dramatizations. Complete descriptive listings can be obtained from the Bureau of Health Education, American Medical Association. The transcriptions are distributed without cost to local medical societies, except for return transportation. Promotional material for local advertising is included. The local medical society is expected to make the necessary arrangements for radio time and to handle the local promotion. Over the past five years radio broadcasts from these transcriptions have averaged about 12,000 individual local broadcasts annually, and virtually the entire inhabited area of the United States is covered. Overlapping occurs to such an extent that in limited areas as many as four or five of these transcribed broadcasts can be heard at various times. For convenience in servicing local requirements, arrangements have been made with 16 state medical societies to carry a stock of transcriptions and to circulate them within the respective states, thus curtailing the long shipment to and from Chicago.

MEDICAL ETYMOLOGY

In an age when a medical student is no longer required to study Latin and Greek, these subjects having been brushed aside to make way for more training in the basic sciences, it has become expedient to minimize this loss by a study of medical etymology. With some help, any student with little or no knowledge of Latin or Greek can develop an easy familiarity with many important root words from these languages. These will help him to understand not only medical terms but also many other words used in the arts and sciences. When words originating from the same or cognate roots become associated in the student's mind the learning of a large new vocabulary of scientific terms is lightened and may even become a pleasure. To meet the current need for more information on medical etymology than can be found in the dictionaries, several excellent books and articles have been written in the last five or six years. Pepper[1] classified the terms in his book by subjects, and, although this treatment has some advantages, it has obvious disadvantages and has not been used in the more recent books. Skinner,[2] with a fondness for eponyms, included short biographies of many pioneers in the medical sciences whose names have become attached to structures, procedures, or diseases. The most recent book on medical etymology is by Jaeger,[3] who gives much more information about suffixes, prefixes, roots, stems, and the way words are formed than did his predecessors and who, following the lead of the makers of Webster's Dictionary,[4] has added immeasurably to the value of his volume as well as to the reader's pleasure in it by using pictures.

The derivations of words are often obscured by antiquity. With the years words acquire new shades of meaning and some wind up a long way from where they started. For example, sanguine, which originally meant "like blood," now means "hopeful." The meanings of some words are influenced by unrelated words of similar sound. It will come as a surprise to many persons to learn that the words sorrow and sorry are totally unrelated. More than one popular magazine has fallen into the trap of linking the verb "to live" with the unrelated noun "liver." It is well for the novice to be wary of the too simple and popular but false etymological explanations. The perfect book on medical etymology has not yet been written. The writing of it must await a patient scholar with lots of time and few distractions, who, it is hoped, will make a thorough job of it, showing the derivations of medical terms syllable by syllable throughout his book, relating such suffixes as -arium not only to sanitarium but also to other suffixes denoting place, such as -ery, -orium, and -ry, and calling attention to the relationship that exists between such words as genital, gonad, and gynecology. Because the history of medical terms is inextricably linked with the history of medicine, the student of medical etymology will pick up a great deal of medical history as he pursues his course and will thus be doubly rewarded.

---

[1] Pepper, O. H. P.: Medical Etymology, Philadelphia, W. B. Saunders Company, 1949

[2] Skinner, H A.: The Origin of Medical Terms, Baltimore, Williams & Wilkins Company, 1949.

[3] Jaeger, E. C . A Source-Book of Biological Names and Terms, Springfield, Ill., Charles C Thomas, Publisher, 1949.

[4] Picturesque Word Origins, Springfield, Mass., G. & C. Merriam Co , 1933

MEDICAL NEWS

CALIFORNIA

Symposium on Endocrine Diseases and Geriatrics.—A symposium will be held Oct. 22 to 24 in the University of California Extension Building, 540 Powell St., San Francisco, that will present a review of recent developments in endocrinology and geriatrics with suggestions for the management of patients past the age of 50. Information may be obtained from Dr. Stacy R. Mettier, Head of Postgraduate Instruction, Medical Extension, University of California Medical Center, San Francisco 22.

Poliomyelitis Workshop.—The University of Southern California School of Medicine, Los Angeles, in cooperation with the Orthopaedic Hospital and the Rancho Los Amigos Respiratory Center, is offering a four week postgraduate course (Oct. 25 to Nov. 19) in the application of occupational therapy techniques to the treatment of poliomyelitis. Three units of graduate credit are given to qualified occupational therapists registered with the American Occupational Therapy Association. Requests for admission to the first week of the course, presented by the Orthopaedic Hospital, are made to the Polio Teaching Program of the Orthopaedic Hospital, 2400 S. Flower St., Los Angeles 7. Tuition fee is $15. Requests for application for the following three weeks are made to Miriam Thompson, OTR, Box 274, University of Southern California, Los Angeles 7. Tuition fee is $60. Applicants are required to take the entire course. The course is aided by a grant from the National Foundation for Infantile Paralysis. Scholarships covering travel, tuition, and maintenance are available through its Department of Professional Education, 120 Broadway, New York.

DISTRICT OF COLUMBIA

Dr. O'Doherty to Direct Dystrophy Clinic.—Dr. Desmond S. O'Doherty, assistant professor of neurology, Georgetown University School of Medicine, Washington, D. C., has been appointed director of the muscular dystrophy clinic at Georgetown University Hospital. Dr. O'Doherty, who has been head of the Georgetown University neurological service at the District of Columbia General Hospital, has relinquished that position to take over the directorship of the clinic. He succeeds Dr. Tiffany Lawyer, who resigned to accept the clinical professorship in neurology at Columbia University College of Physicians and Surgeons and the directorship of the Montefiore Hospital neurological services in New York.

Personal.—At its recent meeting in Geneva the executive board of the World Health Organization elected as its chairman for the year Dr. Henry Van Zile Hyde, chief, division of international health, U. S. Department of Health, Education, and Welfare, Public Health Service, Washington, D. C.——John C. Eberhart, Ph.D., who since 1947 has been an officer of the U. S. Public Health Service, has joined the staff of the Commonwealth Fund in New York as executive associate. During the last five years Dr. Eberhart has been chief of the Research Grants and Fellowships branch of the National Institute of Mental Health, and previously he was on the faculty of Northwestern University, Chicago.

FLORIDA

Diabetes Seminar.—The Florida Clinical Diabetes Association will hold its second annual meeting at the San Juan Hotel in Orlando, Oct. 21 and 22. Guest speakers include Dr. Henry B. Mulholland, Charlottesville, Va., who will discuss "Diabetes—Its General Management," "Radioactive Isotopes in the Diagnosis and Treatment of Thyroid Disease," "Some of the Complications of Diabetes," "Preoperative and Postoperative Care of the Diabetic Patient," "Indications for Various Insulins and Their Use," and "Cardiovascular Complications," and Dr. Joseph T. Beardwood Jr., Philadelphia, whose subjects will be "Diabetic Ketosis," "New Views on Pathology of Diabetes," "Use of Corticotropic Hormones in Diabetes," "Hemochromatosis, Newer Concepts in Etiology and Treatment," and "The Juvenile Diabetic Patient." At 3:15 p. m. Friday Drs. Mulholland and Beardwood, together with the Florida speakers, will participate in a panel discussion. Dr. Beardwood is scheduled also to address physicians and laymen on the employment of persons with diabetes mellitus. The dinner meeting will be held Thursday at 6:30 p. m., and there will be a public meeting Friday at 8 p. m.

ILLINOIS

Clinics for Crippled Children.—The University of Illinois division of services for crippled children will conduct the following clinics in cooperation with local medical and health organizations:

Oct. 19, Danville, Lake View Hospital.
Oct. 20, Alton, Alton Memorial Hospital; Chicago Heights, St. James Hospital.
Oct. 21, Rockford, St. Anthony Hospital.
Oct. 22, Chicago Heights (rheumatic fever), St. James Hospital.
Oct. 26, Effingham (rheumatic fever), St. Anthony's Emergency Hospital; Peoria, St. Francis Hospital.
Oct. 27, Elgin, Sherman Hospital; Springfield (cerebral palsy), Memorial Hospital.
Oct. 28, Bloomington, St. Joseph's Hospital; Mt. Vernon, Masonic Temple.

Chicago

Meetings of Volunteer Medical Company.—Visitors are welcome to attend the meetings of Volunteer Medical Company 9-20, U. S. Naval Reserve, at the Veterans Research Hospital, Room A 302, 333 E. Huron St. (MO 4-6600), 8 p. m. On Oct. 19 Ilza Veith, Ph.D., will discuss "Medicine in Japan," and on Oct. 26 Capt. Lawrence E. C. Joers, U. S. N. R., Zion, Ill., will outline the reserve program of the Navy.

Meeting on Industrial Medicine.—The Chicago Society of Industrial Medicine and Surgery and the Chicago Casualty Adjusters' Association will hold a joint meeting Oct. 20, 8 p. m., at the Bismarck Hotel. "Industrial Aspects of Heart Disease" will be presented by Dr. Frederick W. Fitz, assistant professor of medicine, Northwestern University Medical School, and medical director, A. B. Dick and Company. Persons of allied medical groups and members of the Workman's Compensation Lawyers Association are cordially invited.

Lectures on Medical History.—The Chicago Medical School, 710 S. Wolcott Ave., announces its ninth annual lecture series, "Medicine and Society." The following lectures have been scheduled at 12:30 p. m. in Amphitheater A:

Oct. 19, Psychiatry Looks at Religion, Harry H. Garner, chairman, department of neurology and psychiatry.
Oct. 26, Medical Care of Veterans, Paul R. Hawley, director, American College of Surgeons.
Nov. 9, Religion Looks at Psychiatry, Rabbi Jacob J. Weinstein, K.A.M. Temple.
Nov. 16, Social Policy for Medical Men, Herman Finer, M.S., D.Sc., professor of political science, University of Chicago.
Nov. 23, The World Health Organization and Its Operation, Irvin M. Lourie, New York, chief of fellowships training branch of the World Health Organization. Medicine in the Bible and the Talmud, Kurt Stern, associate professor of pathology.

Dr. Piero C. Foa is chairman of the seminar and journal club committee in charge of preparing the annual seminar lecture series.

MARYLAND

General Practitioners Meet in Baltimore.—The Maryland Academy of General Practice will hold its sixth scientific assembly at the Lord Baltimore Hotel in Baltimore, Oct. 21, under the

---

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

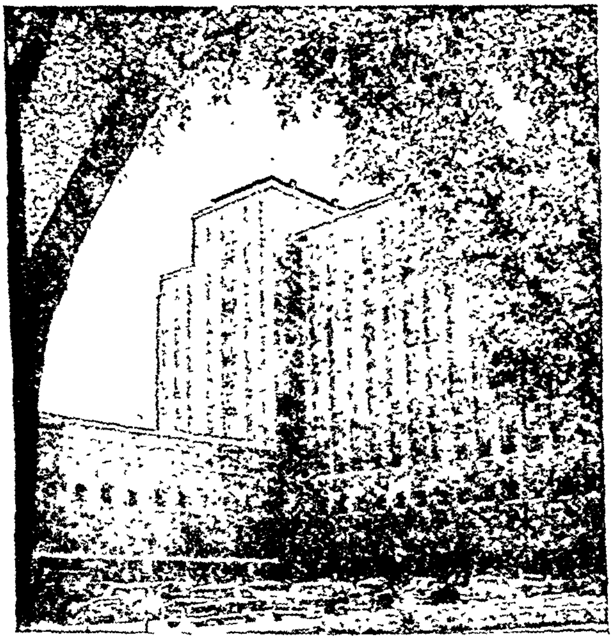
presidency of Dr. Lauriston L. Keown, Baltimore. Dr. Norman E. Sartorius Jr., Pocomoke City, will serve as moderator for the following morning session:

- Common Diseases of the Eye and Their Treatment, Roy O. Scholz, Baltimore.
- Advancements in Therapy of Chronic Pulmonary Emphysema, Maurice S. Segal, Boston

Dr. R. Van L. Campbell, Hagerstown, will moderate afternoon session 1, during which "Parkinson's Disease and Its Management" will be discussed by Dr. Lewis J. Doshay, New York, and "Dermatology in General Practice" by Dr. Donald M. Pillsbury, Philadelphia. Afternoon session 2 will have as moderator Dr. Nathan E. Needle, Baltimore. Dr. John Edmund Bradley, Baltimore, will have as his subject "Regurgitation in Infants." "Changing Trends in Abdominal Surgery" will be presented by Dr. George Crile Jr., Cleveland. A cocktail hour, 6 p. m., will precede the banquet (dress informal), at which Dr. Edward J. Stieglitz, Washington, D. C., will be principal speaker. *Members of the Maryland Academy who attend this assembly will receive credit for 6½ hours of formal postgraduate study.*

MINNESOTA

Dedication of the Mayo Memorial.—The Mayo Memorial, the new addition to the University of Minnesota Medical Center, will be dedicated Oct. 21 and 22 on the university campus in Minneapolis. This memorial to Drs. William J. and Charles H. Mayo, both of whom died in 1939, will be devoted to the advancement of medical education and research. It comprises a 16-story tower section and three 6-story wings connecting with existing hospital and medical school buildings. Its facilities include classrooms, clinical and administrative offices, research laboratories, operating rooms, patient facilities, service departments, a rehabilitation center, a 550-seat auditorium, and an underground garage with space for 200 cars. The theme of the dedication exercises will be "Medical Education and Research: Freedom and Progress in Mid-Twentieth Century." Participants will include, in addition to state and university officials, Drs. Alan Gregg, New York; Charles W. Mayo, Rochester; Leonard A. Scheele, Washington, D. C.; William P. Shepard, New York; Albert C. Furstenburg, Ann Arbor, Mich.; Osborne A. Brines, Detroit; Frank H. Krusen, Rochester; J. Chassar Moir, Oxford, England; Isidor S. Ravdin, Philadelphia; Henry W. Woltman, Rochester; Francis J. Braceland, Hartford, Conn.; Rene J. Dubos, New York; Jack Masur, Washington, D. C.; William H. Sebrell, Bethesda, Md.; Charles A. Janeway, Boston; Robert R. Newell, San Francisco; and Mrs. Lucile Petry Leone, Washington, D. C. The banquet will be held Thursday evening (guest tickets, $4 each). Physicians and other interested persons are *cordially invited to attend the dedication program.*



The Mayo Memorial of the University of Minnesota Medical Center, Minneapolis.

NEW JERSEY

Society News.—The Academy of Medicine of New Jersey will meet Oct. 21, 8:45 p. m., at the academy (91 Lincoln Park South, Newark). The program, a joint presentation of the academy and the Industrial Medical Association of New Jersey, will have as its theme "The Problem of the Injured Hand." The speaker will be Dr. J. William Littler, instructor in surgery, Columbia University College of Physicians and Surgeons and associate attending plastic and reconstruction surgeon, Roosevelt Hospital, New York.

NEW YORK

Dr. Farrell Goes to Florida.—Dr. John J. Farrell, assistant professor of surgery at the Albany Medical College since 1953, has been appointed professor of surgery and chairman of the department of surgery at the University of Miami School of Medicine, Coral Gables. Dr. Farrell, a captain in the U. S. Army Medical Corps from 1943 to 1946, saw service in the European theatre. An assistant resident and then a resident in surgery at the Albany Hospital from 1946 to 1950, he held the Dazian Foundation fellowship in experimental surgery and physiology from 1948 to 1949.

Society News.—Dr. E. Cowles Andrus, Baltimore, recently elected president of the American Heart Association, will be guest speaker for the annual meeting and dinner of the Orange County Heart Association at the Flo-Jean, Port Jervis, Oct. 19. ——Mr. Alton L. Blakeslee, science editor, Associated Press, and president, National Association of Science Writers, will address the Medical Society of the County of Kings in McNaughton Auditorium, Brooklyn, Oct. 19, with "Public Relations and the Doctor."——At the 10th annual president's dinner of the Medical Society of the County of Kings and Academy of Medicine of Brooklyn, in honor of Dr. Alfred P. Ingegno, Brooklyn, Dr. Elmer Hess, Erie, Pa., President-Elect, American Medical Association, will be guest speaker. The dinner will be held Oct. 16 at the Hotel St. George (subscription, $12.50, including cocktails and gratuities).

New York City

Tumor Clinic.—Dr. Marcus M. Ravitch, director of surgery, Mount Sinai Hospital, will present "The Application of Hemipelvectomy to the Treatment of Malignant Tumors of the Lower Extremities" at the tumor clinic conference, Harlem Hospital, Oct. 20, 10:45 a. m.

Second Harvey Lecture.—Dr. Richard J. Bing, professor of experimental medicine and clinical physiology, Medical College of Alabama, Birmingham, delivered the second Harvey lecture of the 1954-1955 (50th anniversary) series at the New York Academy of Medicine, Oct. 14. Dr. Bing presented "The Metabolism of the Heart."

Academy Graduate Fortnight.—In the evening lecture series on infections and their management that forms part of its 27th annual Graduate Fortnight (The Journal, Oct. 9, 1954, page 616), the New York Academy of Medicine will present the following programs at 8:30 p. m. at its headquarters, 2 E. 103rd St.:

- Oct. 20, Approach to Control of Poliomyelitis by Immunological Methods, Thomas Francis Jr., Ann Arbor, Mich.
- Oct. 21, Role of a New Group of Prevalent Viruses in Undifferentiated Respiratory Illnesses, Robert J. Huebner, Bethesda, Md.
- Oct. 22, Epidemiology of Hemolytic Streptococcal Infections, Charles H. Rammelkamp, Cleveland.
  - Use of Antibiotics for Prevention of Rheumatic Fever, Gene H. Stollerman, New York.

The following morning panel meetings have been scheduled from 11 a. m. to 12:30 p. m. during the first week of lectures: Monday, "Fever of Undetermined Origin"; Wednesday, "Local Use of Antibiotics and Proteolytic Enzymes in Surgical Infections"; and Friday, "Management of Nontubercular Pulmonary Infections."

NORTH CAROLINA

Symposium on Hepatic Diseases.—The Raleigh Academy of Medicine will hold its annual symposium in the Sir Walter Hotel Oct. 21. "Diseases of the Liver" will be discussed by Dr. Henry J. Tumen, professor of clinical gastroenterology; Dr. William E. Ehrich, professor of pathology; and Dr. Alfred S. Frobese, assistant professor of surgery, all from the Graduate School of Medicine, University of Pennsylvania, Philadelphia.

OHIO

State Medical Election.—At the annual meeting of the Ohio State Medical Association Dr. Merrill D. Prugh, Dayton, was installed as incoming president and Dr. David W. Heusinkveld, Cincinnati, was chosen president-elect. Dr. Richard L. Meiling, Columbus, continues to serve as treasurer. The next annual meeting will be held in Cincinnati, the week of April 18, 1955.

Two Professors Appointed.—Dr. William F. Ashe has been appointed professor and chairman of the department of preventive medicine, Ohio State University College of Medicine, Columbus. He will assume his new duties on his return from India, where he has been conducting a study in the steel and textile mills. The study was sponsored by the Foreign Operations Administration as part of the U. S. government's Point Four Program.——Dr. John C. Ullery, assistant professor of obstetrics, Jefferson Medical College of Philadelphia, since 1950, and a member of the faculty of the Graduate School of Medicine, University of Pennsylvania, Philadelphia, became professor and chairman of the department of obstetrics and gynecology, Ohio State University College of Medicine, Oct. 1.

PENNSYLVANIA

Meeting of Anesthesiologists.—The Pennsylvania Society of Anesthesiologists will meet at the Bellevue Stratford Hotel, Philadelphia, Oct. 22, in conjunction with the annual meeting of the Medical Society of the State of Pennsylvania. Dr. Torsten Gordh, Stockholm, Sweden, will discuss "The Circulatory Responses to Intermittent Positive Pressure" at the morning session and "The Treatment of Toxic Drug Reactions with Barbiturates" in the afternoon. "Abnormal Responses to the Curare Drugs" will be the subject of Dr. Harry Churchill-Davidson, London, England.

State Medical Meeting at Philadelphia.—The Medical Society of the State of Pennsylvania will hold its 104th annual session Oct. 19 to 22 at the Bellevue-Stratford Hotel, Philadelphia. The new president, Dr. Dudley P. Walker, Bethlehem, who will be installed at the dinner Tuesday, 7 p. m., succeeds Dr. James L. Whitehill, Rochester. The general session will open Tuesday at 1 p. m. with a discussion on income tax problems by Mr. Fred L. Rosenbloom, Philadelphia, after which the following symposium on tobacco will be presented, with Dr. Wendell B. Gordon, Pittsburgh, as moderator:

Effects of Smoking and of Nicotine on the Cardiovascular System of Normal Persons and Patients with Hypertension, Grace M. Roth, Ph.D., Rochester, Minn.
Pharmacology of Tobacco, Harvey B. Haag, Richmond, Va.
Evaluation of the Lung Cancer-Tobacco, Problem, Ernst L. Wynder, New York.
Vascular Responses to Tobacco, Hugh Montgomery, Philadelphia.

Wednesday morning Dr. Gordon will preside at the following symposium about "New Drugs—Their Use and Abuse":

Use and Abuse of Anesthetic Agents and Allied Drugs, Francis F. Foldes, Pittsburgh.
Anti-Infective Drugs, John C. Krantz Jr., Ph.D., Baltimore.
Antihistaminics, George E. Farrar Jr., Philadelphia.
Developments in Diuretic Therapy, Harry Gold, New York.

At 1:30 p. m. William C. Stronach, LL.B., Chicago, will talk on malpractice suits. At 4:10 p. m. there will be a panel discussion, "Your State Hospitals and Your Mentally Sick Patients—A Plea for Better Use of Existing Resources." The general session Thursday morning will be devoted to "A New Look at Malignant Diseases," at which Dr. F. William Sunderman, Philadelphia, will preside and Dr. Campbell Moses, Pittsburgh, will talk on radioisotopes; Dr. Sylvan H. Eisman, Philadelphia, on hormones in the treatment of cancer; and Dr. Ralph Jones Jr., Philadelphia, on leukemia. At 11 a. m. Dr. Cornelius P. Rhoads, New York, will consider "Rational Cancer Chemotherapy." Two panel discussions will be held Thursday from 3:30 to 5 p. m. Dr. Thomas D. L. Weaver, Pittsburgh, will moderate "The Common Cold" and Dr. Joseph T. Freeman, Philadelphia, "Geriatrics and Nutrition," which will be followed by panel discussion. At the specialty meeting on dermatology, Tuesday, 3:30 p. m., Dr. Herbert Mescon, Boston, will have as his topic "Pruritus—Newer Concepts of Mechanisms and Treatment." Motion pictures will be shown daily. The woman's auxiliary will meet concurrently.

Philadelphia

Benjamin Rush Awards.—The Benjamin Rush awards, given annually to the layman and lay group contributing most to the health and welfare of Philadelphia, were presented by Dr. Hugh Robertson, president of the Philadelphia County Medical Society, to Mr. Edmund J. Maxwell, president of the Philadelphia Laryngects, and the fire rescue squad of Philadelphia, respectively, at a luncheon on July 16. Mr. Maxwell, who in 1946 underwent an operation at Jefferson Hospital for cancer of the larynx, has spent many hours after his regular work visiting hospitals and showing others how to talk again. In May, 1951, he founded the Philadelphia Laryngects, whose members number more than 300 and meet monthly to talk over new ways to help others who have undergone laryngectomies. Speech classes, held three times a week, are open to all at no cost, and 10 teachers have been trained from the ranks of the Philadelphia Laryngects. Besides teaching persons to talk, the members of the Philadelphia Laryngects visit and encourage patients who are facing the loss of the larynx. They also enlist the assistance of Philadelphia industries in locating positions for those recovering from laryngectomies. The group up to the present time, under Mr. Maxwell's leadership, has taught 426 persons in the technique of esophageal and pharyngeal speech.

The fire rescue squad, placed in service in 1926 at fire headquarters, due to the heavy concentration of buildings and their combustible contents, has become such an important branch of the fire department that three additional heavy duty units and six light duty units have been added in various areas of the city. Their services include liberating victims pinned in the wreckage of collapsed or burning buildings and in various accidents and giving artificial respiration to drowning victims.

TEXAS

Institute on Epilepsy.—The sixth Western Institute on Epilepsy will be held Oct. 22 and 23 at the Jack Tar Hotel, Galveston, under the sponsorship of Hogg Foundation, University of Texas, Austin; the University of Texas Medical Branch, Galveston; and Baylor University College of Medicine, Houston. The purpose of the institute is to bring together professional and lay workers in the field of epilepsy as a means of coordinating their efforts toward the eventual betterment of the epileptic. This year's program will be devoted primarily to the psychosomatic aspects of epilepsy. Dr. Howard D. Fabing, Cincinnati, president, American Academy of Neurology, will be guest speaker.

Dedication of New Building in Houston.—Dedication ceremonies of the new 10 million dollar building of the University of Texas M. D. Anderson Hospital for Cancer Research in the Texas Medical Center, Houston, Oct. 23, will be preceded by a three day program for general practitioners and laymen. On Wednesday a panel discussion for general practitioners will include "The Physician's Response to the Seven Danger Signals of Cancer." The first afternoon discussion, "What Cancer Patients Think About and Expect from Their Doctors and Nurses," based on the results of a questionnaire and psychological interview study of cancer patients, will be followed by a discussion of "Total Care of the Terminal Cancer Patient." On Thursday "The Chemotherapy of Cancer," "The Control of Pain," "Preoperative Evaluation of Patients with Cancer," and "The Anesthesiology of Cancer Surgery" (including recovery room practice) will be considered. Friday morning there will be panel discussions of "The Team Approach to Gynecologic Cancer" and "Studies of Thyroid Tumors," and Friday afternoon will be devoted to specialty clinics in head and neck, general surgery, and medical malignancies and symposiums on proteins and cancer, biological effects of radiation, and cancer diagnostic tests. A program and a tour of the medical center will be conducted Friday afternoon for the public. A grant of $100,000 to the M. D. Anderson Hospital for Tumor Research makes a total of $440,776 given by the American Cancer Society to the University of Texas branch since 1948. The grant will be used for both treatment and basic research at the hospital, with emphasis on the effects of hormones and radiation.

GENERAL

Society News.—The eastern section meeting of the **American Trudeau Society** will convene Oct. 22 and 23 at the Sheraton Park Hotel in Washington, D. C., under the presidency of Dr. Katharine R. Boucot, Philadelphia. The latest developments in treatment of chest diseases, recent advances in chemotherapy, surgical procedures, and results of investigations of recent medical research will be presented. Three sessions are planned for Friday and one for Saturday morning.——At the annual meeting of the **American Neurological Association** the following officers were elected: Dr. Percival Bailey, Chicago, president; Dr. Johannes M. Nielsen, Los Angeles, president-elect; Dr. Alphonse R. Vonderahe, Cincinnati, first vice-president; Dr. Paul C. Bucy, Chicago, second vice-president; Dr. H. Houston Merritt, New York, secretary-treasurer; and Dr. Charles Rupp, Philadelphia, assistant secretary.

Cancer Conference in Fort Worth.—Immediately before the meeting of the Texas Pediatric Society in Fort Worth, the eighth annual Southwest Regional Cancer Conference will be held, Oct. 21, with "Tumors of Infants and Children" as the subject. The all-day conference at the Hotel Texas will include a luncheon and round-table discussion and a clinic at the Fort Worth Academy of Medicine building at 8 p. m. Guest speakers will be Dr. Robert M. Moore, Galveston, Texas ("Congenital Teratomata" and "Surgical Management of Tumors in Children"); Dr. Edith L. Potter, Chicago ("Tumors of Childhood" and "Résumé of Selected Tumor Cases"); and Dr. Martin H. Wittenborg, Boston ("Radiological Aspects of the Diagnosis of Tumors of Infants and Children" and "Radiological Aspects of the Treatment of Tumors of Infants and Children"). There is no registration fee for the conference.

Workshop on Hearing Problems.—Community attack on the hearing problems of adults will be the subject of a conference and workshop in the auditorium of the U. S. Department of Health, Education, and Welfare, 330 Independence Ave., S. W., Washington, D. C., Oct. 20 to 22, under the joint sponsorship of the Office of Vocational Rehabilitation, Department of Health, Education, and Welfare, and the American Hearing Society. Otolaryngologists, hearing aid manufacturers, and representatives of speech and hearing clinics, schools, hearing societies, rehabilitation centers, and all other interested groups are invited to attend. The purpose of the conference is to define ways to alert a community to its hearing problems and means of resolving those problems through community action. The theme of the workshop will be "Community Organization to Ameliorate the Common Hearing Problems of the People of Working Age." Information may be secured by writing to the Office of Vocational Rehabilitation, Department of Health, Education, and Welfare.

Mental Hospital Institute.—Problems common to mental hospital administrators will be considered at the sixth mental hospital institute at the Hotel Nicollet, Minneapolis, Oct. 18 to 21, under the sponsorship of the American Psychiatric Association Mental Hospital Service. The participants will include staff members of hospitals for mental patients and of schools for the mentally deficient and representatives of central administration offices in Canada and the United States. The program will open with a plenary session on community planning for mental health, with Dr. Robert C. Hunt, assistant commissioner of the New York State Department of Mental Hygiene, Albany, N. Y., as discussion leader. The contributions that religion can make in mental hospitals will be discussed at a plenary session, and a critical discussion of the somatic therapies is scheduled. Other topics include planning a psychiatric hospital building, ways of reducing staff turnover, cost of psychiatric care, state surveys, use of volunteers, contributions of professional personnel other than psychiatrists, recreation in mental hospitals, and property control and security measures.

National Association for Mental Health.—The National Association for Mental Health will hold its annual meeting at the Hotel Statler, New York, Oct. 23 to 25. At the keynote luncheon, Dr. C. Douglas Darling, Ithaca, N. Y., president, New York State Society for Mental Health, will deliver an address. At 2:30 p. m. Saturday Dr. Jack Weinberg, Chicago, will participate in a panel discussion, "The Best in Life at Every Age." Dr. Alan Gregg, New York, will speak at the banquet Sunday, 7 p. m., discussing "The Role of National Associations." Monday at 9:30 a. m. Dr. Edward J. Stainbrook, Syracuse, will participate in a panel discussion, "Ways of Reaching People." At 12:30 p. m. Dr. William Malamud, Boston, N. A. M. H. director, will address the research luncheon, reporting on the Scottish Rite research in dementia praecox, and Dr. George S. Stevenson, New York, national and international consultant, N. A. M. H., will discuss the Fuller report, "A Study of Administration of State Psychiatric Services." Dr. Robert H. Felix, director, National Institute of Mental Health, Bethesda, Md., is the speaker for the closing session at 2:30 p. m.

Gulf Coast Clinical Society.—The annual meeting of the Gulf Coast Clinical Society will be held Oct. 21 and 22 at the Edgewater Gulf Hotel, Biloxi, Miss., under the presidency of Dr. James N. Lockard, Pascagoula, Miss. Thursday morning Dr. Theodore C. Panos, Galveston, Texas, will present "Problems of 'Stress' in Relation to Clinical Practice" and Dr. Ralph E. Dolkart, Chicago, "The Physiology and Treatment of Congestive Heart Failure." Dr. Dolkart will serve as moderator for the luncheon round-table, at which Drs. Howard A. Andersen, Rochester, Minn., and Jesse E. Thompson, Dallas, Texas, will discuss "Consummation of Surgical Procedures in Patients with Cardiopulmonary Disease." In the afternoon Dr. J. Robert Willson, Philadelphia, will discuss "Management of Prolonged Labor"; Dr. Thompson, "Surgical Measures in Hypertension"; and Dr. Clyde Bowie, Anderson, S. C., "Obstruction of the Urinary Tract and Infection." Dr. Alvin J. Ingram, Memphis, Tenn., will open the Friday session with "Preventable Complications in the Management of Fractures," after which Dr. Andersen will consider "Recognition and Management of Certain Esophageal Diseases."

National Safety Congress.—The 42nd National Safety Congress and Exposition will be held Oct. 18 to 22 in Chicago. Sessions on industrial safety are scheduled for the Conrad Hilton, Congress, Morrison, and La Salle hotels; traffic safety sessions, Congress Hotel; commercial vehicle and transit safety sessions, La Salle Hotel; farm safety sessions, Palmer House; school safety, Morrison Hotel; and home safety sessions and armed forces meetings, Conrad Hilton. Presentations by physicians include:

Designing a Practical Industrial Vision Program, Arthur K. Peterson, Chicago.
Use of the Chem-Proof Air Suit (Color, Sound Motion Picture of a New Time-Saving Development for Protection of Personnel in Toxic Areas), Edgar E. Evans, Penns Grove, N. J.
Medical Aspects of Industrial Solvent Exposures, Robert M. Watrous, North Chicago.
Sales Psychology for Health and Safety in Industry, Frederick W. Fitz, Chicago.
Industry's Backache. Back Talk—Keeping Out of Trouble, John R. Stacy, Oklahoma City.
Health Program for Public Employees, John F. Kilgus, Hartford, Conn.
Medical Aspects of Industrial Noise, Aram Glorig, Los Angeles.

Drs. Herbert K. Abrams and Alfred P. Solomon, Chicago, will participate in a panel discussion, "Why Employees Resist Safety," for which Dr. Kozme F. Kapov, Chicago, will be discussion leader. Dr. Paul J. Whitaker, Milwaukee, will take part in presentation of "Noise Control and the Conservation of Hearing."

Association of Medical Colleges.—The 65th annual meeting of the Association of American Medical Colleges will convene Oct. 18 to 20 at the French Lick (Ind.) Springs Hotel. After introduction of the new deans Monday, 9 a. m., Dr. Stanley E. Dorst, Cincinnati, will deliver the presidential address. The remainder of the day will be devoted to reports and discussions of the Teaching Institute on Pathology, Microbiology, Immunology, and Genetics, Oct. 10 to 15. Tuesday morning Dr. Theodore Lidz, New Haven, Conn., will discuss "Results of the Ithaca Conferences on the Teaching of Psychiatry." Dr. John P. Hubbard, Philadelphia, will report on the results of the Colorado Springs conference and Dr. Julius H. Comroe Jr., Philadelphia, on those of the institute. After luncheon Henry T. Heald, LL.D., chancellor of New York University, will discuss "Professional Education as a University Function" from the viewpoint of a university chancellor and Shelden D. Elliott, J.D., dean of New York University school of law, from that of a law school dean. At 9 p. m. the Medical Audio-Visual Institute will sponsor two film programs, one of general interest, including "Career: Medical Technology" (National Committee for Careers in Medical Technology), and the other containing films of interest in medical teaching, including "Fractures About the Elbow" (Veterans Administration). A symposium on graduate medical education will be presented on Sunday, the day preceding the formal opening of the annual meeting.

Awards and Fellowships in Endocrinology.—The council of the Endocrine Society has voted to establish a medal and an honorarium of $1,000 to be given to a person for work of special distinction in endocrinology, who will be chosen from nominations presented by members of the society. The nominee must be a citizen of the United States or Canada. Nominations for the medal of the Endocrine Society, the Ciba award, and the Ayerst, McKenna and Harrison fellowship may be made by any member of the Endocrine Society. They should be submitted on forms that may be obtained from the office of the secretary, Suite 319, 1200 N. Walker St., Oklahoma City 3. Completed nominations should be returned to the secretary not later than Nov. 1. The Ciba award, to recognize the meritorious accomplishments of an investigator not more than 35 years of age in the field of clinical or preclinical endocrinology, is now $1,800. If within 24 months of the date of the award the recipient should choose to use it toward further study in a laboratory other than that in which he is at present working, it will be increased to $2,500.——The Ayerst, McKenna and Harrison fellowship, established in 1947, is designed to assist men or women of exceptional promise in furthering their advancement towards a career in endocrinology. The fellowship is awarded on alternate years (1955, 1957, etc.), and the stipend, which will not exceed $5,000, may be divided into two fellowships in varying amounts in accordance with the qualifications of the appointees. Persons with the M.D. or Ph.D. degree, or candidates for either of these degrees, are eligible for appointment.

Proposals for appointment as scholars of the Endocrine Society should be made in writing by the applicant and addressed to the secretary of the society. They should be submitted by Nov. 1. Notice of awards to successful applicants will be made not later than Dec. 1.

American Cancer Society.—The American Cancer Society will hold its annual scientific session at the Hotel Biltmore, New York, Oct. 18 and 19. "Cancer of the Uterus: A Critical Appraisal of the Problem" is the topic for discussion. Monday morning the incidence and mortality of uterine cancer will be considered by Dr. Herbert L. Lombard, Boston; the familial frequencies of uterine and breast cancer by Dr. Douglas P. Murphy, Philadelphia, who will report on two studies of 821 probands and 9,473 of their female relatives; etiological significance of racial studies in uterine cancer by Dr. Ernst L. Wynder, New York (the New York City study) and Dr. John Higginson, Johannesburg (current studies in South Africa); and marital state and pregnancy in the causation of cancer of the uterine cervix by Dr. Fabien Gagnon, Quebec, Canada. Laboratory studies will be presented in endocrine, enzyme, and anatomic relationships and on the experimental production of uterine cancer in laboratory animals. Dr. Hans Runge of Heidelberg, Germany, will open the afternoon session with a paper entitled "Prevention of Uterine Cancer; Possibilities and Methods," after which "Detection of Early Cancer of the Uterus" will be considered. Dr. George N. Papanicolaou, New York, will discuss the Papanicolaou smear after interpretation has been given by W. Kenneth Cuyler, Ph.D., Durham, N. C. "Diagnosis of Cancer of the Uterine Fundus" will close the Monday sessions. Tuesday morning Dr. Charles S. Cameron, New York, medical director of the society, will serve as moderator for a symposium, "The Role of Radiotherapy and Radical Surgery in the Treatment of Cancer of the Uterus." Dr. Howard Ulfelder, Boston, will moderate an afternoon symposium, "Management of Urinary Tract Complications Following Radical Pelvic Surgery." "Biologic Criteria in the Selection of Patients for the Treatment of Carcinoma of the Cervix" will be presented by Drs. Ruth M. Graham and John B. Graham, Boston; Dr. Alfred Glucksmann, Cambridge, England; and Dr. Stanley Way, Newcastle-on-Tyne, England.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States and its territories and possessions in the weeks ended as indicated:

	Sept. 18, 1954		
Area	Paralytic Type	Total Cases Reported	Sept. 19, 1953, Total
New England States			
Maine	6	8	26
New Hampshire	..	8	1
Vermont	4	5	8
Massachusetts	15	94	47
Rhode Island	..	11	28
Connecticut	7	32	23
Middle Atlantic States			
New York	56	169	236
New Jersey	22	43	55
Pennsylvania	..	111	114
East North Central States			
Ohio	51	214	195
Indiana	8	75	53
Illinois	52	255	139
Michigan	66	181	142
Wisconsin	25	80	47
West North Central States			
Minnesota	22	61	179
Iowa	37	126	41
Missouri	20	53	51
North Dakota	..	4	14
South Dakota	2	12	10
Nebraska	35	71	8
Kansas	9	51	35
South Atlantic States			
Delaware	4	5	3
Maryland	12	21	43
District of Columbia	6	8	3
Virginia	20	39	36
West Virginia	8	21	29
North Carolina	16	48	30
South Carolina	1	11	6
Georgia	10	41	18
Florida	8	56	40
East South Central States			
Kentucky	22	63	8
Tennessee	6	36	15
Alabama	11	23	11
Mississippi	..	20	6
West South Central States			
Arkansas	6	11	16
Louisiana	10	17	10
Oklahoma	2	29	21
Texas	42	119	72
Mountain States			
Montana	5	15	25
Idaho	..	9	4
Wyoming	3	12	3
Colorado	15	34	9
New Mexico	10	24	8
Arizona	4	11	11
Utah	..	38	11
Nevada	..	5	3
Pacific States			
Washington	9	27	38
Oregon	8	15	19
California	142	256	205
Territories and Possessions			
Alaska	12	22	..
Hawaii	1	..	..
Puerto Rico	..	..	..
Total	830	2,700	2,155

CANADA

Louis Gross Memorial Lecture.—The 17th annual Louis Gross memorial lecture, "Rehabilitation in Geriatric Practice," will be delivered under the auspices of the Montreal Clinical Society by Dr. Arthur S. Abramson, clinical professor of physical medicine and rehabilitation, New York Medical College, Flower and Fifth Avenue Hospitals, New York, Oct. 21, 8:30 p. m. in the main auditorium, Nurses' Residence, Jewish General Hospital, Montreal.

MEETINGS

AMERICAN MEDICAL ASSOCIATION Dr. George F. Lull, 535 North Dearborn St , Chicago 10, Secretary.

1954 Clinical Meeting, Miami, Fla , Nov. 29-Dec. 2.

1955 Annual Meeting, Atlantic City, N J , June 6-10

1955 Clinical Meeting, Boston, Nov. 29 Dec 2.

1956 Annual Meeting, Chicago, June 11 15

1956 Clinical Meeting, Seattle, Nov. 27 30

National Medical Public Relations Conference, McAllister Hotel, Miami Fla , Nov 28 Mr Leo F Brown, 535 North Dearborn St , Chicago 10 Director

---

American Academy for Cerebral Palsy, Williamsburg Inn, Williamsburg, Va , Nov 4-6 Dr Harry E Barnett, 116 South Michigan Blvd , Chicago 3, Secretary

American Academy of Dental Medicine, Hotel Statler, New York, Dec 5 Dr William M Greenhut, 124 East 84th St , New York 28, Secretary

American Academy of Dermatology and Syphilology, Palmer House, Chicago Dec 4 9 Dr J E Rauschkolb, P O Box 6565, Cleveland 1, Secretary

American Academy of Neurological Surgery, Broadmoor Hotel, Colorado Springs Colo , Oct 21 23 Dr Eben Alexander Jr , Bowman Gray School of Medicine, Winston Salem, N C , Secretary

American Association of Medical Clinics Jung Hotel, New Orleans, Nov 12 14 Dr Arthur H Griep, 420 Cherry St , Evansville, Ind , Secretary

American Association for the Surgery of Trauma, Hotel Claridge, Atlantic City, N J , Nov 11-13 Dr James K Stack, 700 North Michigan Blvd , Chicago 11, Secretary

American Cancer Society, Hotel Roosevelt, New York, Oct 17-24 Dr Charles S Cameron, 47 Beaver St , New York 4, Medical Director

American College of Cardiology Interim Meeting, Algiers Hotel, Miami Beach Florida, Nov 11 13 Dr Philip Reichert, 140 West 57th St , New York 19, Secretary

American College of Gastroenterology, The Shoreham, Washington, D C , Oct 25 30 Dr A Xerxes Rossien, 33 West 60th St , New York 23, Secretary

American College of Surgeons Convention Hall, Atlantic City, N J , Nov 14 19 Dr Michael L Mason, 40 East Erie St , Chicago 11, Secretary

American Dental Association, Miami, Fla , Nov 8 11 Dr Harold Hillenbrand, 222 East Superior St , Chicago 11, General Secretary

American Society of Anesthesiologists, Netherland Plaza Hotel, Cincinnati, Oct 25 30 Dr J Earl Remlinger Jr , 188 West Randolph St , Chicago 1, Secretary

American Society for the Study of Arteriosclerosis, Sheraton Hotel, Chicago, Oct 31 Nov 1 Dr O J Pollak, P O Box 228, Dover, Del , Secretary

American Society of Tropical Medicine and Hygiene, Hotel Peabody, Memphis, Tenn , Nov 4 6 Dr John E Larsh Jr , Dept of Parasitology, School of Public Health, Univ of North Carolina, Chapel Hill, N C , Secretary

American Therapeutic Society, The Chase Hotel, St Louis, Nov 4-7. Dr Oscar B Hunter, 915 Nineteenth St N W , Washington, D C , Secretary

Association of American Medical Colleges, French Lick Springs Hotel, French Lick, Ind Oct 17 20 Dr Dean F Smiley, 185 N Wabash Ave , Chicago 1, Secretary

Association of Military Surgeons of the United States, Hotel Statler, Washington D C Nov 29 Dec 1 Dr Robert E Bitner, Armed Forces Institute of Pathology, Washington 25, D C , Secretary

Association of State and Territorial Health Officers, Hotel Washington Washington D C , Dec 6-10 Dr Franklin D Yoder, State Board of Health Cheyenne, Wyo , Secretary

California Academy of General Practice, Statler Hotel, Los Angeles, Oct 24 27 Mr Wm W Rogers, 461 Market St , San Francisco 5, Executive Secretary

Central Society for Clinical Research, Drake Hotel, Chicago, Oct. 29 30 Dr Robert H Ebert, 950 East 59th St , Chicago 37, Secretary

Congress of Neurological Surgeons The Waldorf Astoria, New York, Nov 4-6 Dr Bland W Cannon, 1092 Madison Ave , Memphis, Tenn , Secretary

District of Columbia, Medical Society of the, Hotel Shoreham, Washington, D C , Nov 1-3 Mr. Theodore Wiprud, 1718 M St. N W., Washington, D C , Secretary

Gulf Coast Clinical Society, Edgewater Park, Miss , Oct 21 22 Dr F C Minkler, Pascagoula, Miss , Secretary

Indiana State Medical Association, Murat Temple, Indianapolis, Oct 26 28 Mr James A Waggener, 23 East Ohio St , Indianapolis 4, Executive Secretary

Industrial Hygiene Foundation of America, Mellon Institute, Pittsburgh Nov 17 18 Dr C Richard Walmer, Mellon Institute, Pittsburgh 13, Managing Director

Interstate Post Graduate Medical Asssociation of North America, Municipal Auditorium, Minneapolis, Nov 1-4 Dr. Erwin R. Schmidt, 1300 University Ave , Madison 6, Wis , Secretary.

Inter Society Cytology Council, Statler Hotel, Boston, Nov. 12-13 Dr John B Graham, 32 Fruit St , Boston, Chairman, Program Committee

Midwestern Section of American Federation for Clinical Research, Thorne Hall Auditorium, Northwestern University Medical Campus, Chicago, Oct 28 Dr R L Grissom, Univ of Nebraska College of Medicine, Dept of Internal Medicine, Omaha 5, Secretary

National Association for Mental Health, Hotel Statler, New York, Oct. 23-25 Mr Robert M Heininger, 1790 Broadway, New York 19, Executive Director

National Rehabilitation Association, Baltimore, Oct 24-27 Mr E B Whitten, 514-16 Arlington Bldg , 1025 Vermont Ave , N W , Washington, D C , Executive Director.

National Society for Crippled Children and Adults, Statler Hotel, Boston, Nov 3-5 Mr Lawrence J Linck, 11 South LaSalle St , Chicago 3, Executive Director

Oklahoma City Clinical Society Conference, Oklahoma City, Oct 25-28 Dr Charles E Leonard, 512 Medical Arts Bldg., Oklahoma City 2, Secretary

Omaha Mid-West Clinical Society, Paxton Hotel, Omaha, Oct 25-28 Dr Louis E Moon, 1031 Medical Arts Bldg , Omaha 2, Secretary

Pennsylvania, Medical Society of the State of, Bellevue-Stratford Hotel, Philadelphia, Oct 17-22 Dr Harold B Gardner, 230 State St , Harrisburg, Secretary

Post-Graduate Clinic, Michigan Academy of General Practice, Sheraton-Cadillac Hotel, Detroit, Nov 10-11 Dr F P Rhoades, 970 Maccabees Bldg , Detroit 2, Chairman

Puerto Rico Medical Association, Santurce, Dec 8-12 Dr. Luis R Guzman Lopez, Box 9111, Santurce, Secretary

Radiological Society of North America, Biltmore Hotel, Los Angeles, Dec 5-10 Dr Donald S Childs, 713 East Genesee St , Syracuse 2, N Y , Secretary

Regional Meetings, American College of Physicians

- Michigan, Grand Rapids, Dec 4 Dr H Marvin Pollard, 1313 East Ann St , Ann Arbor, Governor.
- New England, Hartford, Conn , Oct 22 Dr. John C Leonard, 80 Seymour St , Hartford, Conn , Chairman
- New Jersey, Newark, Nov 3 Dr Edward C Klein Jr , 6 South Kingman Rd , South Orange, N J , Governor
- Western New York, Syracuse, Nov 19 Dr Edward C. Reifenstein, 109 South Warren St , Syracuse 2, Governor
- Western Pennsylvania, Pittsburgh, Oct. 27 Dr Roy R Snowden, 3509 Fifth Ave , Pittsburgh 13, Chairman

Seaboard Medical Association, Hotel Cherry, Wilson, N C , Nov 14 16 Dr James M Habel Jr , 191 Bosley Ave , Suffolk, Va , Secretary

Southern Medical Association, St. Louis, Nov 8-11 Mr C P Loranz, 1020 Empire Bldg , Birmingham 3, Ala , Secretary

Southern Society of Cancer Cytology, St. Louis, Nov 8-11 Dr J Ernest Ayre, 1155 N W 14th St , Miami, Fla , Secretary

Southern Surgical Association, Hollywood Beach Hotel, Hollywood, Fla , Dec 7-9 Dr George G Finney, 2947 St Paul St , Baltimore 18, Secretary

Southwestern Medical Association, Hotel Paso del Norte, El Paso, Texas Nov 17 19 Dr Celso C Stapp, 800 Montana St., El Paso, Texas, Secretary

Virginia, Medical Society of, Shoreham Hotel, Washington, D C , Oct. 31-Nov 3 Mr Robert I Howard, 1105 W Franklin St , Richmond, Executive Secretary

Western Surgical Association, The Broadmoor, Colorado Springs, Colo , Dec 2-4 Dr Michael L Mason, 154 East Erie St , Chicago 11, Secretary

FOREIGN AND INTERNATIONAL

Commonwealth Health and Tuberculosis Conference, Royal Festival Hall, London, England, June 21-25, 1955 Mr J H Harley Williams, Tavistock House North, Tavistock Square, London, W C 1, England, Secretary General

Conference of the Solvay Institute of Sociology, Universite Libre de Bruxelles, Brussels, Belgium, Oct 18 23, 1954 For information write Assistant to the Secretary, A Dorsinfang Smets, Solvay Institute of Sociology, Parc Leopold, Brussels 4, Belgium

Congress of International Association of Applied Psychology, London, England, July 18-23, 1955. Dr. C. B. *Frisby, National Institute of* Industrial Psychology, 14 Welbeck St., London, W.1, England, President.

Congress of the International Diabetes Federation, Cambridge, England, July 4-8, 1955. Mr. James G. L. Jackson, 152 Harley St., London, W.1, England, Executive Secretary General.

European Congress on Rheumatism, Scheveningen, The Hague, Netherlands, June 13-17, 1955. Dr. H. van Swaay, Pieter Bothstraat 12, The Hague, Netherlands, Secretary.

Health Congress of the Royal Sanitary Institute, Bournemouth, England, April 26-29, 1955. Mr. P. Arthur Wells, Royal Sanitary Institute, 90 Buckingham Palace Road, London, S.W.1, England, Secretary.

Inter-American Congress of Radiology, Shoreham Hotel, Washington, D. C., U. S. A., April 24-29, 1955. Dr. Eugene P. Pendergrass, 3400 Spruce St., Philadelphia 4, Pa., U. S. A., Secretary-General.

Inter-American Session, American College of Surgeons, Universidad Mayor de San Marcos de Lima, Lima, Peru, S. A., Jan. 11-14, 1955. Dr. Michael L. Mason, 40 East Erie St., Chicago 11, Ill., U. S. A., Secretary.

International Anatomical Congress, Paris, France, July 25-30, 1955. Prof. Gaston Cordier, 45, rue des Saints-Pères, Paris 6ᵉ, France, Secretary-General.

International Congress of Biochemistry, Brussels, Belgium, Aug. 1-6, 1955. Prof. C. Liebecq, 17 Place Delcour, Liege, Belgium, Secretary-General.

International Congress of Comparative Pathology, Lausanne, Switzerland, May 26-31, 1955. Professor Hauduroy, 19 rue Cesar Roux, Lausanne, Switzerland, Secretary-General.

International Congress of Criminology, London, England, Sept. 4-10, 1955. For information write: Dr. Carroll, 28 Weymouth St., London, W.1, England.

International Congress of Military Medicine and Pharmacy, Luxemburg, Luxemburg, Nov. 7-12, 1954. Colonel A. R. Vernengo, Direcion General de Sanidad Militar, Pozos 2045, Buenos Aires, Argentina, S. A., Secretary-General.

International Congress of Plastic Surgery, Stockholm, Sweden, Aug. 1-4, 1955, and Uppsala, Sweden, Aug. 5, 1955. Dr. Tord Skoog, Uppsala, Sweden, General Secretary.

International Hospital Congress, Lucerne, Switzerland, May 30-June 3, 1955. Capt. J. E. Stone, International Hospital Federation, 10 Old Jewry, London, E.C.2, England, Hon. Secretary.

International Surgical Congress, Geneva, Switzerland, May 23-26, 1955. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary-General.

Japan Medical Congress, Kyoto University and Kyoto Prefectural Medical College, Kyoto, Japan, April 1-5, 1955. Dr. Mitsuharu Goto, University Hospital, Medical Faculty of Kyoto University, Kyoto, Japan, Secretary-General.

Latin American Congress of Physical Medicine, Lima, Peru, S. A., Feb. 14-19, 1955. Dr. Cassius Lopez de Victoria, 176 East 71st St., New York 21, N Y., U. S. A., Executive Director.

Neuroradiologic Symposium, London, England, Sept. 13-17, 1955. Dr. R. D. Hoare, National Hospital, Queen Square, London, W.C.1, England, Secretary.

Pan-American Academy of General Practice, Lima, Peru, S. A., Feb. 11-25, 1955. Dr. Arturo Martinez, 54 East 72nd St., New York 21, N. Y., U. S. A., Secretary.

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 21-23. Sec., Dr. D. G. Gill, 537 Dexter Ave., Montgomery 4.

Arizona:* *Examination and Reciprocity.* Phoenix, Jan. 12-14, 1955, and April 13-15, 1955. Ex. Sec., Mr. Robert Carpenter, 401 Security Bldg., Phoenix.

Arkansas:* *Regular. Examination.* Little Rock, Nov. 4-5. Sec., Dr. Joe Verser, Harrisburg. *Eclectic. Examination and Reciprocity.* Little Rock, Dec. 8-9. Sec., Dr. O. L. Atkinson, 2528 Central Ave., Hot Springs National Park.

California: *Written.* Sacramento, Oct. 18-21. *Oral.* Los Angeles, Nov. 20. *Oral and Clinical Examination for Foreign Medical School Graduates.* Sec., Dr. Louis E. Jones, 1020 N Street, Sacramento.

Colorado:* *Examination.* Denver, Dec. 7-8. Exec. Sec., Mrs. B. H. Hudgens, 831 Republic Bldg., Denver 2.

Connecticut:* *Examination.* Hartford, Nov. 9-10. Sec., Dr. Creighton Barker, 160 St. Ronan St., New Haven. *Homeopathic.* Derby, Nov. 9-10. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

Delaware: *Examination and Reciprocity.* Dover, Jan. 11-13, 1955. Sec., Dr. J. S. McDaniel, 229 So. State St., Dover.

District of Columbia:* *Examination.* Washington, Nov. 8-9. Deputy Director, Mr. Paul Foley, Department of Occupations and Professions, 1740 Massachusetts Ave., N.W., Washington.

Florida:* *Examination.* Jacksonville, Nov. 21-22. Sec., Dr. Homer Pearson, 901 NW. 17th St., Miami 36.

Idaho: *Examination and Endorsement.* Boise, Jan. 10-12, 1955. Exec. Sec., Mr. Armand L. Bird, 364 Sonna Bldg., Boise.

Iowa:* *Examination.* Des Moines, Dec. 6-8. Exec. Sec., Mr. Ronald V. Saf, New State Office Bldg., Des Moines 19.

Kansas: *Examination and Reciprocity.* Topeka, Dec. 8-9. Sec., Dr. O. W. Davidson, 872 New Brotherhood Bldg., Kansas City.

Kentucky: *Examination.* Louisville, Dec. 6-8. Asst. Sec., Mr. R. F. Dixon, 620 S. 3rd St., Louisville.

Louisiana: *Examination and Reciprocity.* New Orleans, Dec. 2-4. Sec., Dr. Edwin H. Lawson, 930 Hibernia Bank Bldg., New Orleans 12.

Maine: *Examination and Endorsement.* Portland, Nov. 9-10. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

Maryland: *Regular. Examination.* Baltimore, Dec. 14-17. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic.* Baltimore, Dec. 14. Sec., Dr. Robert H. Reddick, R.D. #2, Cambridge.

Massachusetts: *Examination.* Boston, Jan. 18-21, 1955. Sec., Dr. Robert C. Cochrane, Room 37, State House, Boston.

Minnesota:* *Examination and Reciprocity.* Minneapolis, Oct. 19-21. Sec., Dr. E. M. Jones, 230 Lowry Medical Arts Bldg., St. Paul 2.

Mississippi: *Reciprocity.* Jackson, December. Asst. Sec., Dr. R. Whitfield, Old Capitol, Jackson 113.

Nebraska:* *Examination.* Omaha, June, 1955. Director, Bureau of Examining Boards, Mr. Husted K. Watson, State Capitol Bldg., Room 1009, Lincoln 9.

New Jersey: *Examination.* Trenton, Oct. 19-22. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New York: *Examination.* New York City, Albany, Buffalo, and Syracuse, Feb. 15-18, 1955. Sec., Dr. Stiles D. Ezell, 23 S. Pearl St., Albany 7.

North Dakota: *Examination.* Grand Forks, Jan. 5-8, 1955. *Reciprocity.* Grand Forks, Jan. 8. Sec., Dr. C. J. Glaspel, Grafton.

Ohio: *Examination.* Columbus, Dec. 13-15. *Reciprocity.* Sec., Dr. H. M. Platter, Wyandotte Bldg., Columbus 15.

South Carolina: *Examination and Reciprocity.* Columbia, Nov. 8. Sec., Mr. N. B. Heyward, 1329 Blanding St., Columbia.

Texas:* *Examination and Reciprocity.* Fort Worth, Dec. 2-4. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth 2.

Utah: *Reciprocity.* Salt Lake City, Nov. 16. Director, Department of Registration, Mr. Frank E. Lees, 324 State Capitol Bldg., Salt Lake City.

Virginia: *Examination.* Richmond, Dec. 9-11. *Reciprocity.* Richmond, Dec. 8. Address: Board of Medical Examiners, 631 First St., S.W., Roanoke.

West Virginia: *Examination.* Charleston, Oct. 18-20. Sec., Dr. Newman H. Dyer, State Office Bldg. No. 3, Charleston 5.

Alaska:* On application. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

Guam: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Sec., Dr. Benedict Cooper, Agana.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: On application. Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

District of Columbia: *Examination.* Washington, Oct. 18-19. Deputy Director, Department of Occupations and Professions, Mr. Paul Foley, 1740 Massachusetts Ave., N.W., Washington.

Florida: *Examination.* Gainesville, Nov. 6. Sec., Mr. M. W. Emmel, Box 340, University of Florida, Gainesville.

Minnesota: *Examination.* Minneapolis, Jan. 4-5, 1955. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis.

Oklahoma: *Oklahoma City, April 8-9, 1955.* Sec., Dr. C. Gallaher, 813 Braniff Bldg., Oklahoma City.

Oregon: *Examination.* Portland, Dec. 4, 1954, and March 5, June 4, Sept. 10, and Dec. 3, 1955. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

Rhode Island: *Examination.* Providence, Nov. 10. Administrator of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

South Dakota: *Examination.* Vermillion, Dec. 3-4. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Texas: *Examination.* Austin, Oct. 22-23. Address, Mrs. Betty Ratcliff, Chief Clerk, 407 Perry-Brooks Bldg., Austin.

Wisconsin: *Examination.* Milwaukee, Dec. 4. Sec., Mr. W. H. Barber, 621 Ransom St., Ripon.

---

*Basic Science Certificate required.

DEATHS

Holmes, Paul McKinley ⊕ Toledo, Ohio; born in Columbus in 1890; Ohio State University College of Medicine, Columbus, 1914; specialist certified by the American Board of Internal Medicine; member of the American College of Chest Physicians and the American Trudeau Society; fellow of the American College of Physicians; past president and on the board of trustees of the Toledo Academy of Medicine; medical director of the Oak Ridge Sanatorium in Green Springs; member of the attending staff, Toledo and Toledo State hospitals and Toledo Society for Crippled Children Convalescent Home; member of the consulting staff at Robinwood Hospital; at one time assistant director of the division of industrial hygiene for the state health department and later in charge of industrial hygiene for the city health department; died Aug. 17, aged 64, of coronary disease.

Werner, Walter Ignatius ⊕ Albuquerque, N. M.; born in Covington, Ky., Feb. 6, 1898; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1923; specialist certified by the American Board of Internal Medicine; member of the board of governors and fellow of the American College of Physicians; member of the American Trudeau Society and the American College of Allergists; at one time medical director of the Oakland County Tuberculosis Hospital in Pontiac, Mich.; director of clinical research, Southwestern Presbyterian Sanatorium; consultant in internal medicine and allergy, Veterans Administration Hospital; lecturer in allergy to nurses, St. Joseph Sanatorium and Hospital; killed in a plane crash Aug. 22, aged 56.

Phillips, Harvey Thomas ⊕ Athens, Ohio; born in 1872; Starling Medical College, Columbus, 1900; at one time elected coroner of Athens County and served one term of two years; formerly probate judge of Athens County; served one term as representative in the General Assembly of Ohio; elected to the Ohio State Senate in 1938, served two terms and voluntarily retired in 1942; medical examiner for the Ohio Industrial Commission from 1942 to 1944; health commissioner of Athens County from 1944 to 1948; medical examiner for the Columbus and Southern Ohio Electric Company from 1948 to 1954; one of the organizers and first secretary of the Athens County Savings and Loan Company; died in Mount St. Mary's Hospital, Nelsonville, July 31, aged 81.

Tolman, Henry Jr. ⊕ Salem, Mass.; born Oct. 15, 1879; Harvard Medical School, Boston, 1906; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology and the New England Otolaryngological Society; fellow of the American College of Surgeons; for many years on the staffs of the Salem (Mass.) Hospital and the Boston City Hospital; affiliated with Cable Memorial Hospital in Ipswich, North Shore Babies Hospital in Salem, Danvers (Mass.) State Hospital, and the Beverly (Mass.) Hospital, where he died Aug. 5, aged 74, of bronchial asthma and emphysema.

Vogel, Harold Raymond ⊕ Pittsburgh; born in McKeesport, Pa., Sept. 6, 1906; Georgetown University School of Medicine, Washington, D. C., 1930; assistant professor of dermatology at the University of Pittsburgh School of Medicine; specialist certified by the American Board of Dermatology and Syphilology; member of the American Academy of Dermatology and Syphilology; served during World War II; affiliated with Pittsburgh Skin and Cancer Foundation and the Children's and St. Margaret's hospitals; consultant in dermatology at the Pittsburgh Tuberculosis Hospital; died Aug. 19, aged 47, of heart disease.

Henderson, Charles William ⊕ Major, U. S. Army, retired, Columbus, Ga.; Vanderbilt University School of Medicine, Nashville, Tenn., 1917; specialist certified by the American Board of Ophthalmology and the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology and the Pacific Coast Oto-Ophthalmological Society; fellow of the American College of Surgeons; served during World War I; entered the regular army in 1918 and retired July 31, 1930; on the staff of St. Francis Hospital, where he died Aug. 9, aged 62, of cerebral thrombosis.

Palmer, Bascom Headen ⊕ Miami, Fla.; Tulane University of Louisiana School of Medicine, New Orleans, 1914; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; served during World War I; past president of the Florida Council for the Blind; for many years an adviser to the Lighthouse for the Blind in Miami; since 1926 a trustee of the University of Miami; affiliated with the Jackson Memorial and Dade County hospitals; died Sept. 2, aged 64.

Remick, Sumner Haven ⊕ Ashburnham, Mass.; Tufts College Medical School, Boston, 1912; member of the American Trudeau Society; formerly vice-president of the Massachusetts Medical Society; at one time director of the division of tuberculosis for the state department of health; formerly medical superintendent of the New Bedford (Mass.) Tuberculosis Sanatorium and the Middlesex County Sanatorium in Waltham; served as a member of the local board of health; died in the Henry Heywood Memorial Hospital in Gardner Aug. 18, aged 68, of coronary thrombosis.

Colvin, Noah Dick ⊕ Germantown, Ky.; University of Louisville Medical Department, 1904; affiliated with Good Samaritan Hospital in Maysville; president of the Bank of Germantown; died Aug. 12, aged 71.

Cowan, Wayne Frost ⊕ Stevens Point, Wis.; George Washington University School of Medicine, Washington, D. C., 1905; fellow of the American College of Surgeons; served during World War I; health officer of Stevens Point; since 1953 physician at the Portage County Infirmary; on the staff of St. Michael's Hospital; died July 3, aged 75, of coronary thrombosis.

Cox, Allen Ennis ⊕ Helena, Ark.; Vanderbilt University School of Medicine, Nashville, 1894; past president of the Mid-South Medical Society; died Aug. 16, aged 82.

Davis, John Francis ⊕ Oil City, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1891; for many years secretary-treasurer of the Venango County Medical Society; served on the pension board of the Civil War and Spanish-American War veterans; formerly member of the local school board; for many years surgeon for the Pennsylvania Railroad; died July 31, aged 85.

Eley, Lemuel Leslie ⊕ Chuckatuck, Va.; University of Maryland School of Medicine, Baltimore, 1892; for many years a member of the county school board; died in the Louise Obici Memorial Hospital, Suffolk, Aug. 20, aged 83, of a cerebrovascular accident.

Gutelius, Charles B. ⊕ Indianapolis; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1906; served during World War I; formerly affiliated with St. Vincent's Hospital; died in the Veterans Administration Hospital July 26, aged 76, of myocardial infarction and coronary thrombosis.

Hoefle, Frank Benjamin ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1896; an Associate Fellow of the American Medical Association; served on the staffs of the Norwegian Lutheran Deaconesses' Home and Hospital and the Methodist Hospital, where he died Aug. 18, aged 79, of cancer.

Johnson, Morris Hale Claybourn ⊕ Vincennes, Ind.; Indiana University School of Medicine, Indianapolis, 1911; died recently, aged 69, of myocardial infarction.

⊕ Indicates Member of the American Medical Association.

Joska, Vincent Vernon ⊕ Baltimore; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1921; died July 1, aged 55, of coronary occlusion.

Keogh, Joseph Patrick Jr. ⊕ Youngstown, Ohio; University of Colorado School of Medicine, Denver, 1934; fellow of the American College of Surgeons; member of the American College of Chest Physicians and the American Trudeau Society; served during World War II; at one time instructor in surgical research at the Ohio State University College of Medicine, Columbus; affiliated with Youngstown Hospital and Mahoning Tuberculosis Sanatorium; died Aug. 9, aged 44, of acute myocardial infarction.

Kepler, Corliss Cecil ⊕ Des Moines, Iowa; State University of Iowa College of Medicine, Iowa City, 1943; member of the Oklahoma State Medical Association; resident at the Veterans Administration Hospital; died July 10, aged 35.

Leachman, Thaddeus C. ⊕ Richmond, Va.; Independent Medical College, Chicago, 1898; Gate City Medical College, Texarkana, Ark., 1907; member of the Oklahoma State Medical Association; died Aug. 5, aged 79, of coronary thrombosis.

Lemon, Willis Storrs ⊕ Clifton Forge, Va.; University of Toronto Faculty of Medicine, Toronto, Canada, 1905; formerly on the faculty of his alma mater; served as professor of medicine at the University of Minnesota Graduate School, Minneapolis-Rochester; specialist certified by the American Board of Internal Medicine; member of the American Association for Thoracic Surgery and the Association of American Physicians; died in the Lewis Gale Hospital, Roanoke, Aug. 19, aged 76, of coronary thrombosis with myocardial infarction.

Lightner, Gordon Hitt ⊕ Upperville, Va.; University of Virginia Department of Medicine, Charlottesville, 1918; member of the Hawaii Territorial Medical Association; served during World War I; died Aug. 10, aged 62, of metastatic epithelioma.

McBeth, Walter, Royal Center, Ind.; Medical College of Indiana, Indianapolis, 1901; served during World War I; died June 25, aged 78, of cerebral hemorrhage.

McCradie, Robert Drinnan ⊕ Oakland, Calif.; University of Illinois College of Medicine, Chicago, 1920; died Aug. 7, aged 65.

McGillicuddy, Helen I. Doherty, Hingham, Mass.; Woman's Medical College of Pennsylvania, Philadelphia, 1895; member of the American Public Health Association; veteran of the Spanish-American War; died Sept. 2, aged 82.

Middlebrooks, William Edward, Panama City, Fla.; Southern College of Medicine and Surgery, Atlanta, 1912; died in Thomasville, Ga., July 2, aged 66, of chronic nephritis and uremia.

Park, Paul Archibald ⊕ Fairfield, Conn.; State University of Iowa College of Homeopathic Medicine, Iowa City, 1910; served during World War I; formerly practiced in Bristol, where he was on the staff of the Bristol Hospital; past president of the Bristol Medical Society; died in the Bridgeport (Conn.) Hospital Aug. 6, aged 70, of arteriosclerotic heart disease.

Remmel, Alva Jacob ⊕ San Francisco; Cooper Medical College, San Francisco, 1905; formerly on the faculty of his alma mater; for many years on the staff of the French Hospital; died recently, aged 78, of myocardial infarction and coronary occlusion.

Schulman, Abraham Samuel ⊕ Union City, N. J.; Long Island College Hospital, Brooklyn, 1920; fellow of the American College of Surgeons; affiliated with the Margaret Hague Maternity Hospital in Jersey City, where he was attending surgeon and past president of the medical staff of Christ Hospital, where he died Aug. 6, aged 55.

Shapiro, Nettie Phillips, New York City; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1909; died in Chicago, Aug. 24, aged 77, of Hodgkin's disease.

Slade, Lois Vida Bronson, Alameda, Calif.; Hahnemann Medical College of the Pacific, San Francisco, 1905; died July 22, aged 75, of cerebral hemorrhage, arteriosclerosis, and hypertension.

Smith, Reuben Christopher ⊕ Marion, Kan.; Kansas City (Mo.) Medical College, 1903; died May 10, aged 80, of coronary occlusion.

Spruit, Charles Booth ⊕ Brigadier General, U. S. Army, retired, Washington, D. C.; Harvard Medical School, Boston, 1915; joined the Medical Corps of the U. S. Army in 1917; retired Oct. 31, 1946; held the Distinguished Service medal, the Bronze Star, and the Legion of Merit; from 1946 to 1951 associated with the Veterans Administration; died in the Walter Reed Hospital, July 3, aged 67, of cerebral hemorrhage.

Stoker, George P., Red Oak, Texas; Missouri Medical College, St. Louis, 1887; Hospital College of Medicine, Louisville, Ky., 1902; died July 23, aged 95.

Sutton, Fredrick Roscoe, Oklahoma City; University Medical College of Kansas City, Mo., 1898; served during World War I; died in the Veterans Administration Hospital Aug. 11, aged 79, of arteriosclerotic heart disease.

Teagarden, Elmer Jay, Rome, Ga.; Johns Hopkins University School of Medicine, Baltimore, 1926; certified by the National Board of Medical Examiners; at one time director of the bureau of tuberculosis for the Florida State Board of Health; formerly affiliated with the Florida State Sanatorium in Orlando and the Morgan County Tuberculosis Sanatorium in Flint, Ala.; died in Apopka, Fla., July 20, aged 53.

Tucker, George Willard, Oak Forest, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; affiliated with the Oak Forest Infirmary, where he died Aug. 13, aged 81, of arteriosclerotic heart disease.

Waterman, James Raymond, Fillmore, N. Y.; University of Louisville (Ky.) Medical Department, 1902; died June 2, aged 79, of arteriosclerosis and prostatic obstruction.

Wiggins, Edward L., Indianapolis; Medical College of Indiana, Indianapolis, 1900; served during World War I; inspector for the city board of health; died in the Methodist Hospital Aug. 11, aged 76, of bronchopneumonia following injuries received in a fall from a ladder.

Wiggins, Elmore Cornelius, Washington, D. C.; Howard University College of Medicine, Washington, 1916; clinical instructor in urology at his alma mater; affiliated with Freedmen's Hospital, where he died July 31, aged 62, of carcinoma of the right lung with metastases.

Wolfe, Theodore Peter ⊕ Taos, N. M.; Universität Zurich Medizinische Fakultät, Switzerland, 1928; specialist certified by the American Board of Psychiatry and Neurology; member of the Medical Society of the State of New York, American Psychiatric Association, and the American Psychopathological Association; formerly practiced in New York City, where he was affiliated with Columbia Presbyterian Medical Center; died July 29, aged 51, of pulmonary tuberculosis.

Woodard, Dean Sanford ⊕ Watsonville, Calif.; St. Louis University School of Medicine, 1914; affiliated with Watsonville Community Hospital; for many years physician for the Southern Pacific Railroad; died Aug. 7, aged 68, of myocardial infarction and coronary occlusion.

Woodruff, James Lloyd, Los Angeles; Jefferson Medical College of Philadelphia, 1909; died Aug. 27, aged 73.

Woolley, Herbert Codey, Sea Girt, N. J.; Jefferson Medical College of Philadelphia, 1904; specialist certified by the American Board of Psychiatry and Neurology; retired colonel, Medical Corps, U. S. Army Reserve; served in France during World War I; from 1924 to 1929 clinical director at St. Elizabeth's Hospital in Washington, D. C., where for many years he was assistant superintendent; formerly superintendent of the Pennhurst (Pa.) State Hospital and the Philadelphia State Hospital; died Aug. 28, aged 73, of myocardial infarction.

Young, Albert T. ⊕ Alexandria, Va.; Maryland Medical College, Baltimore, 1905; died Aug. 21, aged 70.

Zoeckler, Mary Dayton Allen, Brighton, N. Y.; Johns Hopkins University School of Medicine, Baltimore, 1910; served as medical missionary in Persia; died June 14, aged 69, of coronary thrombosis, myocardial infarction, and diabetes mellitus.

FOREIGN LETTERS

BRAZIL

Observations on Newborn Infants Delivered by Forceps.—Dr. Mario G. da Fonseca of Rio de Janeiro reported (*Rev. gynec. e obst.* 48:148, 1954) a statistical study on 755 newborn infants delivered by forceps at the Hospital Pro-Matre between July 1, 1946, and Dec. 31, 1952. The study includes the characteristics of the infants during the first week of life and some facts concerning the pregnancy and delivery of their mothers. During the six and one-half years under consideration, 12,575 live infants were born at the Hospital Pro-Matre, among whom 755 (5.9%) were delivered by forceps. Over the entire period a slight increase in the proportion of forceps deliveries was noted. The study of the prenatal condition of the mothers of the 755 infants showed that in 612 cases (81.1%) the pregnancy was normal and in 143 it was toxemic. Since this private maternity hospital receives many pregnant women of low social status in emergency conditions, a large number of mothers had had practically no prenatal care. Of the 755 infants only 354 had had a serologic test for syphilis; 110 (21.2%) of these were positive. The indications for the use of forceps were: fetal disease 110; fetal disease and maternal exhaustion 63; uterine inertia 137; uterine inertia and fetal disease 247; uterine inertia and maternal exhaustion 93; uterine inertia, maternal exhaustion, and fetal disease 80; eclampsia 13; breech and transverse presentations 6; and maternal exhaustion alone 6. Uterine inertia was thus the leading cause of forceps application. Of the 755 infants, 476 were boys and 279 were girls, or a ratio of about 2 to 1. As for the body length, 241 were less than 50 cm., and 514 were 50 to 55 cm. long. The birth weight was less than 2.5 kg. in 89, 2.5 to 2.9 kg. in 193, 3 to 3.4 kg. in 283, 3.5 to 3.9 kg. in 138, and 4 kg. or more in 52. Of the 755 infants 483 had to be resuscitated. The duration of labor was less than 12 hours in 110, 12 to 24 hours in 398, and more than 24 hours in 247. Thus, the application of forceps occurred in 85.4% after more than 12 hours of labor. This high percentage of late use of forceps was due to the fact that many of these women were hospitalized only after having been treated for several hours by incompetent midwives. Thirty-five deaths occurred among the 755 infants during the first week of life, or an average of 4.6% for the whole period. The variation of the rate, from year to year, showed a definite decreasing trend.

Natural Infection of Phlebotomus Longipalpis in a Focus of Kala-Azar.—Drs. M. P. Deane and L. M. Deane of São Paulo are the first to report (*Hospital, Rio de Janeiro* 45:697, 1954) the natural infection of Phlebotomus longipalpis by leptomonads of Leishmania donovani in an endemic focus of kala-azar in the state of Ceará. The experimental infection of the same insect by this parasite had been reported in 1938 by Ferreira, Deane, and Mangabeira. Working in the area mentioned since December, 1953, the authors examined and classified more than 7,000 sandflies, about 88% of which belonged to the genus Phlebotomus and nearly 99% of the latter to the species P. longipalpis. The females were separated and dissected immediately after egg laying, with the technique of Barreto and Pessoa. This technique has the advantage of (1) allowing a rapid and sure diagnosis of the species; (2) making a clean preparation in which the flagellates are easily visible; and (3) permitting the determination of the predominant localization of the flagellates in the various portions of the digestive tube of the insect.

Of 141 female specimens, 2 were found to be naturally infected by leptomonads. One of them contained semidigested blood, with slight infection limited to the stomach, and the other, with completely digested blood, presented an abundant infection of the stomach, esophagus, and pharynx. The authors believed these to be leptomonads of L. donovani because the insects were caught in an endemic focus of kala-azar, where, besides human cases of the disease, dogs and foxes were found to have the visceral form. They could also obtain experimental infection of P. longipalpis by placing in Shannon's trap dogs infected by L. donovani. Of four female specimens fed on infected dogs and dissected from 6 to 11 days after the feeding, two were found to be heavily infected. The authors consider this species to be the most important vector of visceral leishmaniasis in the area studied and perhaps in the other parts of Brazil where the disease has been reported.

New Suction-Dissector for Tonsillectomy.—Dr. Henrique Crosio of Ribierão Preto (*Rev. paulista med.* 44:327, 1954) describes his new suction-dissector for tonsillectomy, which can be used either with local or general anesthesia. The dissector is a metal tube 24 cm. long with an opening at each end. The end used in contact with the tissues is curved like a dissector commonly used for tonsillectomy (Neumann, Hurd) and is provided with a 15 mm. oval opening for the draining of blood and saliva during the dissection. The handle is connected, through a rubber tube, with a pedal-operated suction pump. The use of the new instrument shortens the duration of the operation and makes it easier both for the surgeon and the patient.

DENMARK

Chemotherapy of Renal Tuberculosis.—Dr. J. Meyer has compared 100 patients treated for renal tuberculosis between 1949 and 1951 with 111 patients treated between 1943 and 1949, before the effective introduction of modern chemotherapy. The group treated with chemotherapy was given 1 gm. of dihydrostreptomycin daily for three months plus 12 gm. of *p*-aminosalicylic acid (PAS) daily for six months. Streptomycin-resistant strains of tubercle bacilli developed in some patients when streptomycin was given by itself but never when it was combined with *p*-aminosalicylic acid. In 43 of the patients given this combined treatment tubercle bacilli disappeared from the urine, the search for them, including guinea pig inoculation, having yielded consistently negative results for at least a year after the completion of treatment. Dr. Meyer, whose report is published in *Nordisk medicin* for Aug. 26, 1954, notes that when tubercle bacilli recur in the urine after initially successful chemotherapy they nearly always do so within four months after the completion of such treatment. In other words, absence of tubercle bacilli from the urine for more than four months will probably continue indefinitely.

Among the 111 patients who served as controls and received only conservative treatment such as sanatorial care and ultraviolet light, only 18 became free from tubercle bacilli in the urine. Such freedom of more than one year's duration was recorded in only seven of these patients. In both groups operative treatment was not indicated, and the nature, localization, and extent of the tuberculosis were about the same in both groups. The success achieved by modern chemotherapy has influenced the indications for operative treatment. In 1943 the diagnosis of unilateral renal tuberculosis was promptly taken as an indication for operative treatment, whereas in 1951 conservative treatment enjoyed much greater use.

Detoxication of Drunkards.—Since Dr. Oluf Martensen-Larsen of Copenhagen published his first observations of disulfiram (Antabus), he has explored various other means of preventing and combating alcoholism. By supplementing disulfiram therapy with the administration of an antihistamine preparation plus sodium chloride he has shown that much can be done to break the chain of events in an alcoholic period. His latest publication on the subject appeared in the *British Medical Journal* for Aug. 21, 1954, in which he referred to the sobering effect of vitamin B_6. He has given it intravenously in the form of Benadon with doses of 100 mg. He has found the scope of activity for vitamin B_6 limited to cases of excitation, the effect subsiding in about one hour. The same effect can, however, be obtained by repeat-

---

The items in these letters are contributed by regular correspondents in the various foreign countries.

ing the injection. Since August, 1953, he has used fructose to promote the metabolism of alcohol. Fructose has a sobering and sedative effect corresponding to that of vitamin B_6 but appearing more slowly. On the other hand, the fructose effect persists somewhat longer and is often followed by a desire for sleep that, when satisfied, tends to rid the patient of any desire for more alcohol. Thus B_6 and fructose, given at the same time, supplement each other. A useful substitute for pure fructose has been found by Martensen-Larsen in Danish honey, half the sugar content of which is fructose. Honey is given by mouth in two doses of about 125 gm. at an interval of half an hour. The honey-alcohol reaction, reminiscent of a disulfiram-alcohol reaction, always subsides within half an hour and is often quite transitory. It leaves no discomfort, in particular no feeling of that physical exhaustion encountered after an disulfiram-alcohol reaction. This honey medication may well be combined with disulfiram-antihistamine-sodium-chloride therapy. With these remedies Martensen-Larsen has found it always possible to quiet a patient and render him manageable.

Daniels' Test for Erythema Nodosum.—In 1949, Daniels published an account of his biopsy method—removal of nonpalpable lymph glands from the neck under local anesthesia. Through a 3 cm. incision over the lateral border of the sternocleidomastoid muscle, parallel with and just above the clavicle, the region superficial to the scalenus anterior is explored. In *Ugeskrift for læger* for Sept. 9, 1954, Dr. Steen Olsen reports his experience with this method since 1952 in nine patients with erythema nodosum. The clinical findings were remarkably uniform. The patients, all women, were between the ages of 22 and 58 and were admitted to hospital with high fever and articular symptoms, which in five contributed to the diagnosis of rheumatic fever on admission. In eight of the nine patients bilateral enlargement of the hilus glands was found. In four the biopsy indicated the probability of tuberculosis, and in three the most likely diagnosis was sarcoidosis. In the remaining two patients nonspecific inflammatory changes were found in the excised lymph glands. Culture of the excised tissues for tubercle bacilli was carried out in seven, and tubercle bacilli were demonstrable in one. In view of the failure of the clinical examination to differentiate between the various possible causes of erythema nodosum, the value of this biopsy is enhanced.

Reform of International Medical Congresses.—The 24th Northern Congress of Internal Medicine was held in Stockholm last September. The 25th congress will, it is planned, be held in Copenhagen in 1956, when it will be presided over by Prof. Einar Meulengracht of the Bispebjerg Hospital in Copenhagen. Speaking of the 1954 congress, Professor Meulengracht expressed the belief that the organization of such a meeting at present does not reflect the profound changes that have taken place in the dissemination of recent knowledge. At one time important discoveries were deferred until they were announced at some international meeting after being kept in "cold storage" for a year or two. Now such discoveries are reported at the meetings of local medical societies or in the medical press. In these and other ways they become general knowledge and attendants at international congresses know to a large extent what is the content of the formal papers to be presented. Professor Meulengracht's remedy for this is to promote round-table conferences attended by small groups interested in some special subject. It is probable that Meulengracht's scheme of reform will prove particularly acceptable in the comparatively small Scandinavian medical world whose members know more about each other than the members of larger communities.

ENGLAND

Physicians' Legal Risks.—At the recent annual meeting of the British Medical Association, Mr. William Mair, a solicitor, attributed the recent increase in litigation to (1) the National Health Service, which was believed to have converted the cure of the sick from a work of mercy freely offered and freely accepted to a right purchased by a weekly stamp; (2) the institution of the legal aid scheme; and (3) the wide publicity given to cases, which had caused patients to take the attitude "What can we lose?" He stated that negligence could be an act of commission or an act of omission. A physician ought to bring to his treatment of a patient the reasonable skill and care professed by the normal and prudent practitioner of the same experience and training. No one can guarantee a favorable outcome, but, with the exercise of knowledge, skill, care, and diligence, there can be no negligence. He mentioned, however, the intrusion into this branch of the law of a transfer of the onus of proof from the plaintiff to the defendant. In England, but not in Scotland, there is now a tendency to transfer the liability from the physician to the employing authority (hospital). This could be dangerous to the freedom of the profession. Mr. Mair concluded by criticizing those physicians and dentists who run the risk of acting as operator and anesthetist at the same time.

Mr. Hector McKechnie of Edinburgh, Scotland, said that the main causes that had led to an increase in actions against physicians and hospitals since the National Health Service Act became law were the growing materialism of the relationship between physician and patient, the new facilities for legal aid, and the readiness of medical experts to give evidence against their colleagues. When a person meets with a misfortune he at once seeks to make someone else liable and no longer regards it as a visitation of God. The bond between the physician and his patient had been loosened by the Health Service. Treatment is now a right, not a privilege. If the physician makes a mistake, the patient reasons that the physician can afford to pay for it. In Scotland, a hospital board is not liable for the faults of persons performing skilled professional services, but in England such a liability had been increasingly imposed since 1942. Mr. McKechnie expressed the hope that the Scotch courts would not follow the English example in this regard. He warned the medical profession that embarking on unorthodox treatment without the patient's consent would be apt to lead to disaster if the treatment failed and the patient sued. He thought that courts ought to have the help of medical assessors in cases of negligence involving physicians.

Child Welfare.—Mothers are the chief guardians of child welfare in all sections of society, says a report issued by the Nuffield Foundation. "A family with a good mother can withstand a feckless or even a vicious father, but rarely can a family survive if the mother fails." According to Prof. James Spence in his book, "A Thousand Families in Newcastle upon Tyne," 1,142 babies were born between May and June of 1947 in 1,132 families. A year later the total was 967 as a result of 44 deaths, 127 removals, and 4 whose families did not cooperate. The fathers ranged from university professors and merchants to "down and outs" and at least one burglar. Eighty per cent of the mothers were rated satisfactory, 9% unsatisfactory, and 5% indifferent. One house in seven was unfit for habitation, and one family in three was overcrowded, necessitating great parental devotion and high domestic skill in caring for children.

Although no one was better placed than the family physician to advise parents on disease prevention and to educate them in the significance of symptoms, there was little inclination on his part to undertake this responsibility. Parents were not warned of the danger of exposing infants to tuberculosis and other infections. Most children were taken around freely in buses, trams, trains, and cars. At least 70 and probably many more were taken to the cinema in the first year of life, 5 within the first month, and the earliest on his ninth day. At least 15 of the deaths could have been prevented. An infant mortality rate of 23 per 1,000, instead of 44, should be the target figure for the future. Only 203 children had no illness requiring medical care. The remaining 764 had 1,625 illnesses. Many were preventable. The investigators conclude that although family physicians and hospitals have played an essential part in the diagnosis and treatment, their work has not been primarily responsible for the improvement in child health in the past 40 years. "Further prevention will now depend mainly on the education of family doctors in the principles of health and development of children and in the prevention of their diseases. This throws back on medical schools the responsibility for a better clinical education and a more realistic training of undergraduates and graduates." The children suffered from 1,400 infectious diseases requiring precision in diagnosis and treatment, few of which were studied in teaching hospitals. The medical schools must face this question of how to present a balanced view of disease to students.

Growing Risks from Barbiturates.—A letter to the *Daily Telegraph* from A. L. Wagland states that although there is new hope for the tuberculous, the person with leprosy, and for the sufferer from various diseases formerly regarded as fatal, there are increasing reports of serious, sometimes fatal, results attending the use of modern drugs. The ready availability of some of these, notably the barbiturates, has given rise to an alarming increase in drug poisoning, both accidental and suicidal. Statistics for 1931 show that out of a total of 5,147 suicides by all methods 0.23% were due to barbiturates and another 0.23% were due to "accidental" poisoning with the same drugs. The corresponding figures for 1951 were: 4,469 suicides, with 5.5% due to barbiturates and 2.6% due to "accidental" deaths from the same drugs. The figures for 1952 show that the rise continues; of 4,338 suicides 10.9% were due to barbiturates and 3.2% were due to "accidental" poisonings. No fewer than 98 different brands of various barbiturates are available on the open market. Addiction to barbiturates is a growing problem, and the mental changes accompanying barbiturate poisoning are a cause of concern.

Wrong Injections.—The Central Health Services Council was set up by the National Health Service Act of 1945 to advise the Minister of Health on a wide range of subjects. An investigation was carried out by a subcommittee of the council into the accidental injection of wrong solutions into hospital patients. While the prevention of this kind of mishap is largely a matter of common sense, the report makes a few helpful suggestions. One of these is that no coloring matter should be added to any injectable fluid, while naturally colorless fluids not used for injecting but supplied to operating rooms should be artifically colored. The name of the drug on an ampul should run parallel to the long axis and insofar as possible all injectable fluids should be made up in ampul form. Ampuls may be sterilized in formaldehyde vapor. The report warns against giving only verbal orders for administration of dangerous drugs. When all is said and done, it is up to the person giving the injection to read the label on the container, for this is "the most effective single precaution that can be taken against accidents."

SWEDEN

Prevention of Dental Caries.—Reference has already been made (The Journal, May 16, 1953, page 264) to the dental caries research carried out at the Vipeholm Hospital since 1947. The recent issue of a report on this research, with special reference to the part played by carbohydrates in the development of dental caries, has given the Swedish Ministry of Health an opportunity to use the conclusions indicated by this research. Evidently the time is not yet proper for the issue of hard and fast rules for combating dental caries, and the Ministry of Health has outlined a great number of voluntary measures the adoption of which would presumably go far to reduce the ravages of this disease. The more than 900 dentists responsible for the dental welfare of some 350,000 children are urged to pay special attention to cases of severe dental caries with a view to notifying the authorities about them and to cooperating with physicians in dietetic measures calculated to prevent such caries. The medical and dental professions are invited to cooperate in popular health education on this subject by means of the press, radio, pamphlets, and posters.

The Ministry of Health has also made some recommendations to industries concerned with the production and sale of foods and other preparations that contain sugar and that are likely to promote dental caries. The consumption of candies, sweetened tablets, and similar products should be discouraged, and bakers should learn to provide a greater variety of products containing little or no sugar. Sugarless bread should have a distinctive appearance enabling the consumer to identify it easily. In 1951 the total consumption of sugar in Sweden was approximately 45 kg. per person, a sugar consumption rate higher than that of many other countries. It is suggested that taxation might prove effective in reducing the consumption of sugar. It is even possible that discrimination might be exercised with regard to taxation in such a way that preparations with very high sugar content, such as candy, would be selected for high taxes. Measures might also be adopted with a view to discouraging the sale of candies in or near schools. Popular education should aim at discouraging the consumption of sugar between meals or at the end of the day. The eating of sweets at short intervals while reading or attending movies should also be frowned on, and the midday meal should end with cheese, sugarless bread, butter, and some nonsweetened beverage.

All the above and many other measures are advocated by the Ministry of Health in the hope that the Swedish people will soon learn to discard certain habits and traditions that in the past have increased the possibility of dental caries. It should be noted that the people of Sweden are asked to put their own house in order rather than to obey government edicts.

Experiences of a Paratyphus (Breslau) Epidemic.—In the summer of 1953 a severe and widespread outbreak of gastroenteritis gave rise to much concern, partly because of the initial obscurity of its origin. In *Svenska läkartidningen* for July 10, 1953, Dr. Jonas Lindahl and Dr. Justus Ström of the Stockholm Fever Hospital give an account of the experiences of this hospital with cases of Salmonella breslau gastroenteritis. Severe diarrhea and vomiting frequently produced signs of intoxication and shock; the patients became drowsy, cold, and cyanotic, with a weak and rapid pulse and falling blood pressure. In severe cases, there was albuminuria and hematuria, and electrocardiographic signs of myocarditis were not rare. The conventional tests for intoxication and shock were carried out, and the conventional treatment with blood or plasma transfusion was successfully adopted. These more radical measures were followed up, as the patient's condition improved, with the administration of a solution of sodium bicarbonate to combat acidosis.

The question may be raised whether the modern treatment with antibiotics is likely to play an important part in such cases as a substitute for the above-mentioned, well-established methods for combating the worst effects of severe gastroenteritis of the paratyphus breslau type. Dr. Lindahl and Dr. Ström find that the older methods are by far the most important and lifesaving. In severe cases, little can be achieved by use of chlortetracycline (Aureomycin), chloramphenicol (Chloromycetin), or oxytetracycline (Terramycin). "In the common, slight and moderately severe cases of gastroenteritis we have not been able to observe any convincing effect from the remedies in question. As the effect is therefore most questionable, we can hardly be justified from the clinical point of view in adopting a more general use of these expensive remedies." It is also noted that negative results from feces tests after treatment with antibiotics are apt to be misleading, as the germs in question are liable to recur when the treatment is discontinued.

Tuberculosis Statistics.—A report that was published by the Swedish National Association Against Tuberculosis shows in many different ways how tuberculosis is receding under the various measures taken against it. One of the most cheering signs is the closing of institutions for tuberculosis or their diversion to the treatment of other diseases. During the most recent five year period, a total of 825 beds for tuberculous patients have been diverted in this way. The 8,516 new cases of tuberculosis registered in 1952 showed an appreciable decline on the corresponding figure for the previous year. Among these were 1,496 cases of open tuberculosis; the corresponding figure for 1951 was 1,590. There were 1,293 deaths from tuberculosis of all forms in 1952, the equivalent of 0.18 per 1,000 inhabitants. Here again there was a considerable fall in comparison with previous years. The fact that 85% of these deaths from tuberculosis concerned persons already registered with the central tuberculosis dispensaries is a tribute to the efficacy of the tuberculosis dispensary system. At the end of 1952, there were 77,754 cases of tuberculosis registered (0.9 per 1,000 inhabitants), and this figure showed a reduction of 3,086 from a year earlier. At the end of 1952, the cases of open tuberculosis numbered 7,043, or 1 per 1,000 inhabitants. According to the same report, the number of BCG vaccinations in 1952 exceeded those of previous years.

CORRESPONDENCE

BLEEDING PEPTIC ULCER

To the Editor:—This note refers to an article in THE JOURNAL, June 26, 1954, page 833, entitled "Bleeding Peptic Ulcer Complicating Hydralazine and Hexamethonium Bromide Therapy," by Mandelbaum, Brook, and Mandelbaum. In this article bleeding from a duodenal ulcer developed in the patient, who was markedly hypertensive, following therapy with hydralazine and hexamethonium. This complication simulates the occasional experience observed after surgical sympathectomy. Wilkins speculated that autonomic sympathetic blockade might allow unopposed hyperacidity to become exaggerated and precipitate hemorrhage from a peptic ulcer.

I have observed a patient who has had hypertension for many years, ranging around 210/120 mm. Hg. He had never had the drugs above mentioned but was taking rauwolfia preparations for about a year. In the early part of the year he had been taking alseroxylon (Rauwiloid), 4 mg. per day, and about two months prior to the incident to be discussed he had received Raudixin (a whole rauwolfia root), 50 mg. twice a day. He complained that after taking this drug he always experienced pain in the epigastrium. However, since these symptoms were not common with this drug, he continued to take the medicament. He had had a slight hemorrhage in the gastrointestinal tract about two years previously that cleared up with bed rest. The roentgenogram taken after the last bleeding showed no abnormality. The patient, a 49-year-old physician, was admitted to the hospital on April 24, 1954, and discharged on May 8. Two days before admission, melena of a mild nature had developed. He had a moderate attack of melena the night before admission. The next evening he had a very large, tarry stool and immediately went into shock. He was seen the same evening. His pulse was 120 per minute, blood pressure 100/60 mm. Hg, and he manifested air hunger. A transfusion was promptly started, after which the shock improved. The next day his blood pressure was 160/90 mm. Hg, and he appeared to be in much better condition. An electrocardiogram taken after the first bleeding showed a left ventricular strain with very deeply depressed T waves in the chest leads. This was taken to be due to a coronary insufficiency caused by severe anemia. His hemoglobin level after the first bleeding was 10 gm. per 100 cc. and the following day fell to 9 gm. per 100 cc. Thereafter, several small transfusions were given. On April 26, he again had massive bleeding and again went into severe shock. The blood pressure was 100/70 mm. Hg, and the pulse was 120 per minute. A consultation was called, but by the time the consultant arrived the blood pressure had risen to 150/90 mm. Hg and the pulse had fallen to 92 per minute. The consultant stated that if any more gastrointestinal bleeding should occur an operation was mandatory, even though at this time the exact site of the bleeding was not known ("blind" gastric resection). It is always a hazardous thing to do, but it was felt that no choice was available if he bled again. Fortunately, this did not occur. On April 27 the patient was given a diet of gruel and junket; his blood pressure was 160/90 mm. Hg. The blood pressure was maintained until his discharge on May 8. On May 5 an electrocardiogram showed left ventricular strain, but now the T waves were all upright in the chest leads. His hemoglobin level on discharge was 12 gm. per 100 cc. He has continued asymptomatic to date. The gastrointestinal series done on May 19 showed marked prepyloric spasm. There was irregularity of the prepyloric portion of the stomach, especially on the lesser curvature side. This could be due to either a spasm or gastritis. Under antispasmodic therapy the irregularity still persisted, so that a gastritis of a hypertrophic type was the probable diagnosis. The duodenal bulb was normal in all the films.

Rauwolfia preparations act centrally, probably in the hypothalamus. They do not have autonomic blockade effects. The activity of the rauwolfia preparations is postulated to be due to a decreased central sympathetic activity. In this way, they may allow the unopposed activity of the parasympathetic nervous system. As a matter of fact, in a recent issue of the *Annals of the New York Academy of Science* (59:8, 1954), Plummer and others show a marked increase of gastric secretion in a dog following injection of reserpine (the active alkaloid of rauwolfia preparations). When reserpine was given with an anticholinergic agent the gastric acidity fell considerably, and when a larger amount of anticholinergic agent was given along with the reserpine the acidity fell almost to zero. Thus, it can be seen that another drug widely used in hypertension should be used cautiously in patients who have a history of peptic ulcer or previous gastrointestinal bleeding. This patient is especially mentioned because in the case reported by Mandelbaum, Brook, and Mandelbaum the patient also was later given rauwolfia. It would seem to be important to combine rauwolfia with an anticholinergic drug in order to prevent a recurrence of the gastrointestinal hemorrhage.

LOUIS PELNER, M.D.
1352 Carroll St., Brooklyn 13, N. Y.

EXTRAMAMMARY PAGET'S DISEASE

To the Editor:—The paper by Greeley and Curtin, "Extramammary Paget's Disease" (*J. A. M. A.* **155**:1054 [July 17] 1954), serves the meritorious purpose of calling an often unsuspected entity to the attention of the profession at large. However, the authors' peremptory statement that theirs is the 28th proved case of this disease and their pathogenetic conclusions should not go unchallenged, because the wide distribution and the authority of THE JOURNAL lend weight to any statement printed in its pages. A probably far from complete survey of the literature since 1937 reveals 22 published cases of extramammary Paget's disease, or 10 more than those listed by Greeley and Curtin. This would make their case the 38th published case if one follows Weiner's evaluation of older reports. Cases of extramammary Paget's disease not listed by Greeley and Curtin (in addition to the case of Pinkus and Gould) are reported in the following journals: *Bull. Soc. franç. dermat. et syph.* **55**:120-121, 1948; *Dermatologica* **101**:153-157, 1950; *Cancer* **2**:144-152, 1949; *South. M. J.* **45**:28-30, 1952; *Cancer* **5**:1161-1169, 1952; and *Dermatologica* **106**:305, 1953.

In 1939, in one of the articles that escaped the authors' attention, Gould and I analyzed 70 case reports of extramammary Paget's disease (Pinkus, H., and Gould, S. E.: *Arch. Dermat. & Syph.* **39**:479-502 [March] 1939), including the 57 cases listed by Weiner, 12 additional ones from the literature, and 1 of our own. We accepted only 12 cases as "reasonably assured" instances of Paget's dermatosis and listed 16 other "possible" instances. It was concluded that Weiner's concept of apocrine gland origin appeared acceptable for most cases but that other epidermotropic cancers, in our case a mucin-secreting carcinoma of the rectum, also can produce all the clinical and histological features of Paget's dermatosis. It was pointed out that the "Paget phenomenon" (prolonged symbiosis of the epidermis with cancer cells of extraepidermal origin) is the pathognomonic feature of true extramammary Paget's disease, while other cases reported under this heading could be classified as various types of basal cell or epidermoid carcinoma, including Bowen's dermatosis. It is likely that the exact number of proved cases of extramammary Paget's disease never will be known, particularly since such cases are diagnosed as a routine matter by dermatologists and pathologists every year.

HERMANN PINKUS, M.D.
12 E. 4th St., Monroe, Mich.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACTS

Hospitals in General: Mental Suffering as Element of Damages.—This was an action for damages alleged to have been caused by the negligence of the defendant hospital. From a judgment for the defendant, the plaintiff appealed to the district court of appeal, second district, division 2, California.

The plaintiff wife entered the defendant hospital under contract to receive obstetric care and services at the birth of her baby. On the third day thereafter the defendants delivered to the plaintiff an infant purporting to be her own. The plaintiff and her husband took the child to their home and cared for it until their discovery that it was the offspring of others. On making known their grievance to the defendants, the latter delivered to the plaintiffs another child that, they asserted, was the progeny of the plaintiffs. This action was instituted to recover damages allegedly resulting from the defendants' negligence in causing "profound shock to their nervous systems; that they sustained great physical and mental suffering and were made sick, sore and lame."

The plaintiff's appeal was based primarily on the instruction that the court gave to the jury. That instruction read: "You are instructed that mental suffering alone will not support an action for damages of this kind. Therefore, if you find that the only injury suffered by the plaintiff was mental suffering, then your verdict must be for the defendants and against the plaintiffs. Unless you find that plaintiffs suffered actual physical injury as the proximate result of defendants' negligence, they cannot recover in this case because fright or mental suffering alone will not sustain a recovery for plaintiffs." In addition to this instruction the jury were told that "definite nervous disturbances or disorders caused by mental shock and excitement are classified as physical injuries and will support an action for damages for negligence where they are the proximate result of negligence on the part of the defendants." It is presumed, said the court, that if the jury had found such "disturbances or disorders" to have resulted to the plaintiffs or either of them from nervous shock they would have returned a verdict for the plaintiffs. Since the jury did not do so, the plaintiffs now seek to subvert the ancient rule that mental suffering alone will not support an action for damages based on negligence. It cannot be overemphasized, the court continued, that the human body can through negligence of others suffer injury in only two ways: (1) by physical impact and (2) by shock, through the senses, to the nervous system. A person can suffer both at the same time or he can experience one alone. Had the delivery of the wrong baby produced such an impact on the nervous system of either plaintiff as to cause physical injuries, the jury were, under their instructions, authorized to award damages for such injuries and to supplement them with damages for mental suffering, anxiety, and loss of sleep. The only evidence of injury was the testimony of the plaintiff wife that she had severe back and stomach pain and ached all over. Evidently, said the court, the jury did not credit such complaints to nervous shock. Because there were no physical injuries, recovery for mental suffering was not authorized.

Whether the plaintiffs suffered emotional shock with consequent loss of sleep and, if so, whether it resulted in physical injuries are questions of fact and as such were determined against the plaintiffs under appropriate instructions. The jury either found no negligence or found no nervous shock or found contributory negligence on the part of the plaintiffs. The finding of any one of these, the court concluded, was authorized by the evidence and the law. Accordingly the judgment in favor of the defendant hospital was affirmed. *Espinosa et al. v. Beverly Hospital et al., 249 P. (2d) 843 (Calif., 1952).*

MEDICAL FILM REVIEWS

Repair of Inguinal Hernia (Surgical Residency Series): 16 mm. color, sound, showing time 42 minutes. Prepared by Francis D. Moore, M.D., Peter Bent Brigham Hospital, Boston. Sponsored by Winthrop-Stearns, Inc., New York. Produced in 1953 by and procurable on free loan from Sturgis-Grant Productions, Inc., 322 E. 44th St., New York 17.

The purpose of this film, as it states, is to teach residents the surgery of inguinal hernia. In this respect it falls short. This production presents a technique used by a given group in the management of inguinal hernias. This should be emphasized at the outset, because there is a distinction between presenting a subject and presenting a specific technique. Many of the steps depicted in the film are controversial. For example, many surgeons who are interested in the physiology of the internal oblique muscle would condemn hooking the ligated sac under this muscle. It is believed that this maneuver interferes with the important sphincter-like mechanism of the structure. For the same reason it seems inadvisable to suture the internal oblique muscle to or toward the ligamentum inguinale (Poupart's ligament). In depicting this latter step in the film the surgeon continually refers to "the conjoined tendon." Since this film is for use in teaching, there should have been some mention of the fact that some anatomists feel no such structure as the conjoined tendon exists; in reality it is a thickening of the transversalis fascia. The importance of the transversalis fascia is not expounded in the film nor is the all-important differentiation between the physiopathology of direct and indirect inguinal hernias brought out.

Errors that should have been corrected in editing this film are as follows: 1. In the first case presented the "femoral triangle" was pointed to as being above the ligamentum inguinale. 2. An indirect inguinal hernia sac is not "lateral" to the spermatic cord but medial to it. 3. The same structure was continually designated by three terms, namely, "the external oblique fascia," "the external oblique muscle," or "the external oblique." In no instance was the correct term, "external oblique aponeurosis," used. 4. In case 2, after the medial flap of the external oblique aponeurosis was reflected, "the internal oblique muscle" was erroneously called "the anterior rectus sheath." 5. The statement that indirect inguinal hernia in females is "rare" is surely a mistake. 6. Whenever the normal anatomic obliquity is altered weakness must result. The repair shown in the film completely destroys the all-important obliquity of the inguinal canal by making a "new external ring." The commentator mentioned that by so doing the canal is strengthened. This is debatable.

These criticisms are not in consideration of the film per se but from the standpoint of this as a "teaching film for residents." The meticulous technique, the gentle handling of tissue, and the photography must be commended. The film can be recommended as a presentation of a technique in the management of inguinal hernias; however, it cannot be recommended as a teaching film.

Surgery of Abdominal Cryptorchidism (Torek Orchidopexy): 16 mm., color, silent, showing time 33 minutes. Prepared in 1953 by Harry A. Zide, M.D., and Lester A. Riskind, M.D., Beverly Hills, Calif., and Adolph A. Kutzman, M.D., Los Angeles. Procurable on loan from Harry A. Zide, M.D., 405 N. Bedford Dr., Beverly Hills, Calif.

The purpose of this film is to show the anatomy of abdominal cryptorchism, a method of surgical correction, and the end-result. The surgery is performed on a 10-year-old boy who had previously undergone right orchiopexy (Torek operation) for bilateral abdominal cryptorchism that had not improved with hormone therapy. The film shows abdominal exploration and finding of left pelvic testis, mobilization, and extraperitonealization. The testis is placed in the scrotum with thigh fixation, and the right testis is freed from the thigh and is shown lying in normal position in the scrotum. The author expresses his belief that this procedure will preserve fertility and prevent subsequent malignant disease of the testes; however, these are controversial points. The photography is well done. This film is suitable for urologists and surgeons interested in the author's method of performing this operation.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Bacterial Endocarditis: The Process of Healing. M. G. McGeown. Ulster M. J. 23:39-46 (May) 1954 [Belfast, Ireland].

Although bacterial endocarditis has been recognized as a separate disease entity since Ormerod in 1851 described its vegetations and showed how they differed from rheumatic verrucae, several problems remain unsolved. Following the advent of the sulfonamide drugs and the antibiotics, the problems in connection with healing have become increasingly important. To study the cellular process of healing, the postmortem records of the Institute of Pathology of Belfast, from January, 1938, to January, 1950, were reviewed. The series included both treated and untreated cases. Material from 80 cases was available for histological study. It was found that the healing of bacterial vegetations occurs in the following stages: invasion of the base by fibroblasts and young capillaries, endothelialization of the surface, formation of a fibrous tissue capsule, death of bacteria, and calcification of the necrotic center of the vegetation. It is suggested that the accepted classification of bacterial endocarditis into acute and subacute types does not serve any useful purpose, and it is proposed that the disease should be called bacterial endocarditis, qualifying this when possible with the word healing or healed and the name of the causal organism. In a comparison of treated and untreated patients, it appeared that, while the healing may be facilitated by treatment, the essential nature of the process of healing is not altered. There is no apparent relationship between the presumed age of the vegetation and its histological appearance. Less advanced healg, in general, occurred in vegetations due to pyogenic organs, while healing had progressed further in those due to the treptococcus viridans. The tissue response of the patient seems to have an important bearing on the degree of healing. This might be influenced by the state of nutrition of the patient and by bacterial toxins produced by the bacteria causing the disease. It is essential to diagnose and treat bacterial endocarditis while the vegetations are still small if a good functional result is to be obtained. Treatment should be prolonged, since, apparently, viable bacteria can persist for long periods in the middle of healing vegetations.

Canadian Field Trials on the Oral Use of Diphtheria Toxoid. L. Greenberg, F. R. Chown, R. E. Willits and others. Canad. J. Pub. Health 45:103-111 (March) 1954 [Toronto, Canada].

The studies described are concerned essentially with the "booster" effect of orally administered diphtheria toxoid, since previous studies had shown that oral immunization has little or no value in the primary immunization against diphtheria. Two vehicles were used for the administration of the oral toxoid, caramel candy or chewing gum. Volunteers, all over 20 years of age, were obtained from the laboratory staffs of the Ottawa Civic Hospital, the Food and Drug Laboratories, Ottawa, Ontario, and the Laboratory of Hygiene. These persons were organized into three groups. Blood samples were taken from each person before immunization, five weeks and three months after immunization, and then at three month intervals until the study was completed. Group 1 was given toxoid caramels with 500 Lf (limit of flocculation) diphtheria toxoid at the rate of three a day for six days. Group 2 was given toxoid caramels with 125 Lf diphtheria toxoid three a day for five days. Both groups were asked to suck the caramels slowly, since it was suggested that "the stimuli responsible for increases of titer take place only between the lips and the lower end of the esophagus." The members of group 3 received toxoid chewing gum, containing 1,000 Lf diphtheria toxoid and 500 Lf tetanus toxoid, at the rate of three sticks a day for five days. The latter group was asked to chew each stick for at least 30 minutes. Trials on 651 persons demonstrated that orally administered diphtheria toxoid is not as effective as parenterally administered diphtheria toxoid as a secondary or booster dose in the immunization of humans against diphtheria. Approximately one year after immunization, only 60% of 562 persons receiving toxoid orally had increased levels of circulating diphtheria antitoxin as compared with 89% of 89 controls receiving toxoid parenterally. Older age groups benefited from oral immunization to a significantly greater degree than younger age groups. There were no reports of constitutional or intestinal disturbances in any of the subjects who received oral immunization. If the oral route is to have a place in immunization programs, it will most probably be for adult groups in which a high proportion have been previously immunized.

Detection and Prevention of Tuberculous Primary Infection by Routine Application of the Tuberculin Patch and BCG Vaccination to the Children of a Large French Town: The Montreuil Experiment, 1948-1952. Acta tuberc. belg. 45:305-319 (June) 1954 (In French) [Brussels, Belgium].

The antituberculous campaign carried on at Montreuil (population 70,000) since October, 1948, has been so successful that within another two or three years Montreuil will undoubtedly be the first French town to report the complete disappearance of primary tuberculous infection. The tuberculin patch test, which constitutes the simplest, fastest, and least disturbing method of mass screening, is used to detect the presence or absence of tuberculous infection in children up to the age of 10. Older children are tested by their intradermal reaction to Pasteur Institute tuberculin (3 units). Vaccination with one ampul containing 75 mg. of BCG (bacille Calmette Guérin) in solution, furnished by the Pasteur Institute, is performed by cutaneous scarification, on the ankle or the outside of the arm in young children and on the anterior surface of the thigh in those who are older. The site of vaccination is kept covered for five days with a small protective dressing. BCG is completely harmless, but experience has shown that certain precautions are necessary when a child is to be given other vaccinations as well. These precautions are summarized in four rules, as follows: 1. Never perform an "ordinary" vaccination in a person close to his first tuberculization, even when it is common (with simple conversion of the cutireaction) or "orthoergic." 2. Never perform an ordinary vaccination in a person whose skin tests are hyperergic, whatever the "age" of the primary infection, whether normal or pathological. 3. If BCG vaccination is to be given after an ordinary vaccination, the two vaccinations should be separated by at least three months. 4. If an ordinary vaccination is to be given after BCG vaccination, the intervening period should be at least six months. The efficacy of routine BCG vaccination in preventing primary infection is shown by the fact that the primary infection morbidity rate in persons aged from under 1 to 19 years at Montreuil fell from 5.55% to 3.75%, while in a comparable nearby town, where vaccination was not practiced routinely, the rate rose from 4.91% to 15.41%. This extraordinary rise in morbidity in the control town, which was not due to statistical chance but was substantiated by other trial observations made in the same area, may be explained in part by the fact that, while tuberculous mortality in Europe has been declining, tuberculous morbidity resulting from reinfection, and therefore the sources of contagion, has remained constant.

The place of publication of the periodicals appears in brackets preceding each abstract.

Periodicals on file in the Library of the American Medical Association may be borrowed by members of the Association or its student organization and by individual subscribers, provided they reside in *continental* United States or Canada. Requests for periodicals should be addressed "Library, American Medical Association." Periodical files cover 1945 to date only, and no photoduplication services are available. No charge is made to members, but the fee for other borrowers is 15 cents in stamps for each item. Only three periodicals may be borrowed at one time, and they must not be kept longer than five days. Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors, and can be obtained for permanent possession only from them.

About 1,000 vaccinations a year are performed at Montreuil, especially among school children, who are vaccinated in the classrooms, and the rare primary infections now seen occur in children under 4 years of age. A second experiment that has been under way at Montreuil since September, 1952, is an attempt to prevent tuberculous reinfection or relapse by prophylactic treatment consisting of the monthly oral administration of 50 mg. of desiccated BCG from the Pasteur Institute (6 doses in all, or a total of 300 mg.) as advocated by the Brazilians, De Assis, Rosemberg, and Silveira. More than 130 persons have so far participated in this program without inconvenience or reactivation of disease, but the value of the treatment as a means of preventing reinfection or relapse will not be known for some time.

Staphylococcal Pneumonia. A. P. Grant and J. M. Barber. Ulster M. J. 23:27-33 (May) 1954 [Belfast, Ireland].

This report is concerned with 15 pneumonia patients in whose sputums a coagulase-positive Micrococcus (Staphylococcus) pyogenes var. aureus was isolated in pure, or almost pure, culture. Only four of these occurred during an outbreak of influenza. The remaining 11 had no connection with influenza. The 15 cases of micrococcic pneumonia constituted about 3% of all patients hospitalized with pneumonia. The illness was severe in all four patients with epidemic influenza. One of these died, while the remainder had residual pulmonary fibrosis. Of the 11 patients in whom the disease was of moderate severity all but one were males, and their ages ranged from 13 to 65 years. The illness usually commenced with pleural pain, rigors, and cough, and four had increasing dyspnea. The sputum was yellow and thick, often tinged with blood. Most of these cases were clinically indistinguishable from pneumococcic lobar pneumonia and the patients were hospitalized after failure to respond to treatment for several days at home or within a short time of onset because their condition was toxic. Four patients had effusions, all of which cleared up following antibiotic therapy. Two of the patients had temporary cavities. Bronchial obstruction by thick tenacious sputum is a serious complication. Indirect bronchial suction is indicated. It gave dramatic relief to three patients who appeared moribund. Heart failure with auricular fibrillation occurred in a patient with mitral stenosis, and a micrococcic abscess of the thigh developed in another patient. Ten of the 11 moderately severe cases responded favorably to treatment, minimal fibrosis and pleural thickening being the only residue in three of them. The remaining patient then had three more attacks of pneumonia within five months and had a severe degree of fibrosis. Penicillin was the initial therapy for all except one of the patients, and it was adequate for six but had to be replaced for four patients. Streptomycin produced recovery in three and aureomycin in one. Micrococcic pneumonia remains a serious illness, although the mortality has been greatly reduced by antibiotics.

Systemic Blastomycosis: Cause of an Obscure Infection in a Nonendemic Area. F. J. Marx and A. A. Berenbaum. New England J. Med. 251:56-60 (July 8) 1954 [Boston].

The occurrence of systemic blastomycosis is reported in an 18-year-old Negro, a native of North Carolina who had moved to Philadelphia three months before the onset of his illness. Most cases of North American blastomycosis are concentrated in the southeastern United States and in the Mississippi River valley. In the diagnosis of any of the mycotic diseases one should ascertain the residence of the patient for the previous five years, especially for the two or three months before the onset of symptoms. The onset of the disease in the authors' patient was insidious and began as a subacute respiratory infection. A pneumonic process developed and failed to respond to several different courses of antibiotics. The initial clinical picture resembled common bacterial, viral, or rickettsial infection of the lungs. After the condition persisted, tuberculosis, neoplasm, and collagen disease were suspected. The patient presented a diagnostic and therapeutic problem with respiratory infection; dry, hacking cough; chest pain; and, later, purulent blood-streaked sputum; high temperature; great loss of weight and strength; and night sweats. After the onset of an acute septic arthritis in the left knee, a joint paracentesis was performed and resulted in 95 cc. of creamy yellow fluid, smears and cultures of which were positive for Blastomyces dermatitidis. The blastomycin skin test was negative after 48 hours. Complement fixation was negative for histoplasma and coccidioides and positive for blastomyces in a dilution of 1:16. A 15 day course of stilbamidine was instituted nine weeks after the onset of the symptoms. The initial dose was 50 mg. in 200 cc. of 5% dextrose in isotonic sodium chloride infusion given intravenously. Subsequently daily increments to 75 mg., 100 mg., and then 150 mg., in the same vehicle were administered for the remainder of the course. The patient improved only temporarily, his condition became worse despite additional treatment with oxytetracycline (Terramycin) and cortisone, and he died. Blastomyces organism was demonstrated at necropsy in sections from the heart, lungs, spleen, and left knee joint. The lung lesions, which were round and white, resembled miliary tubercles in all respects. The duration of the disease in this patient was three months from the onset of symptoms to the time of death and thus was shorter than the average duration. Five cases of systemic blastomycosis collected from the literature were treated successfully with stilbamidine. Review of these therapeutic successes revealed that the clinical course in all the patients was more chronic and less fulminant than that in the authors' patient.

The Local Injection of Hydrocortisone in the Treatment of the Painful Joint. T. E. Weiss, T. Duncan and B. de la Cruz. J. M. A. Georgia 43:629-631 (July) 1954 [Atlanta, Ga.].

One hundred five patients with various types of arthritis were treated by intra-articular injections of hydrocortisone. The results were very good in 57 with osteoarthritis, but not very good in 12 with rheumatoid arthritis. Two of four patients with acute gout obtained good results from the injection. In general, this type of treatment is considered by the authors to be a useful adjunct in the treatment of joints involved with osteoarthritis, rheumatoid arthritis, traumatic arthritis, gouty arthritis, tendinitis, or bursitis. Pain and inflammatory symptoms are relieved for varying periods of time. The method treats only the localized manifestations of the pathological process and should always be used in conjunction with a well-planned program of treatment. No adverse side-effects were noted. The injection can be used successfully when administered repeatedly over periods of weeks or months; injections every few days are contraindicated. If benefit is not noted after the initial injection, it is advisable to repeat the injection at least once before discarding this form of therapy.

Treatment of Chronic Arthritis with a Combination of Cobra Venom, Formic Acid, and Silicic Acid. K. D. Bryson. Am. Surgeon 20:751-755 (July) 1954 [Atlanta, Ga.].

Bryson used a preparation of cobra venom silicic acid solution with formic acid as a buffer to treat chronic arthritis. This product has been tested in the arthritis clinics of the Charity Hospital in Cleveland and in the Maryland General Hospital in Baltimore. The solution, containing cobra venom, formic acid, and silicic acid, is a clear, water-white liquid, stable for at least a year under ordinary refrigeration. It is injected with a 25 or 26 gauge needle subcutaneously, close under the skin, usually in the deltoid region or in the anterior part of the thighs 3 or 4 in. above the knees. The injection should produce a perceptible elevation. This insures infiltration of the deep layers of the skin, which seems essential for the maximum effect. Treatments are given at weekly intervals. The usual sequence of dosage is 1 cc., 1.5 cc., 2.5 cc., and 3 cc. The injection is divided into two equal parts for simultaneous injection into different sites. If given slowly the stinging effect is negligible. For patients who are hypersensitive to pain, 0.5 cc. of procaine 2% may be added to each dose in the syringe. The interval between treatments at the start is one week, increased to two weeks when control of symptoms is established. Usually after 5 to 10 treatments, two weeks apart, the interval can be lengthened to three or four weeks, and gradually by increments of two weeks to once every three months, at which interval most patients elect to stay for fear of a relapse. Many have been able to stop treatment entirely without recurrence for periods up to five years. Four hundred sixty-six unselected patients were treated in this manner. About 150 other patients started this treatment during this time but did not continue it. In the evaluation, only osteoarthritis, rheumatoid arthritis, and mixed types are differentiated, and variants assigned to the closest general type; hence Marie-Strümpell arthritis and Post-Still's disease are included with the rheumatoid group. Satisfactory results were obtained in 426, or in 91.4%, of the 466 cases. Two hundred seventy-seven of the patients were asked about their own evaluation of the treatment; 82% considered their progress satisfactory during treatment, and 93% of those in whom treatment had terminated from six months to five years before questioning stated that their present status was satisfactory. The author feels that this treatment has advanages over others in current use. It is applicable to all types of arthritis in ambulant patients, and there are no unfavorable side-effects. There is no interference with the course or the treatment of concomitant diseases. The improvement is sustained, and relapses are infrequent. Emergency surgery is not interfered with. The medication need be given only once a week and is relatively inexpensive.

Evaluation of the Bryson Treatment of Arthritis. W. R. Lumpkin and W. M. Firor. Am. Surgeon 20:756-759 (July) 1954 [Atlanta, Ga.].

After examining a group of unselected patients who had been treated by Bryson for chronic arthritis with a mixture of cobra venom, silicic and formic acids, a clinic was set up in the outpatient department of the Maryland General Hospital to verify the efficacy of this method. At first only patients referred by their family physician were accepted for study; however, as patients benefited from the treatment, some became so enthusiastic that they referred others. In an attempt to be objective, the components of Bryson's mixture were separately prepared in sterile ampuls and designated by letters, so that the person giving the injections did not know what particular substance was being given. Solution A contained formic acid; solution B was made up of cobra venom, formic and silicic acids; solution C was a mixture of formic and silicic acids. At the time of this report the study had been in progress for 15 months, during which period 88 patients had been treated. The severity of the disease varied but was grave enough to cause the patient to seek relief and to continue therapy. The arthritis was classified as rheumatoid or hypertrophic, the latter predominating. Formic acid (solution A) proved practically ineffective, but solution C (formic and silicic acid) effected improvement in 8 of the 10 patients in whom it was tried, but when improvement failed to continue treatment was continued with solution B (formic plus silicic acids and cobra venom). Solution B was used in a total of 66 patients, but 4 of these discontinued treatment after three treatments or less, and in a fifth patient the symptoms were not due to arthritis but to a back injury. Of the remaining 61 patients, 52 responded, and 9 did not. "Response" implies subsidence or cessation of the cardinal manifestations of arthritis and includes relief of pain, subsidence of swelling, lessening of stiffness, increased mobility, and improvement in the patient's sense of well-being. The authors conclude that their results parallel those reported by Bryson. Although the treatment does not "cure" arthritis, it gives substantial relief of symptoms to more than 80% of the patients.

Weil's Disease in Georgia: Report of Nine Human Cases. A. Packchanian. J. M. A. Georgia 43:632-634 (July) 1954 [Atlanta, Ga.].

Nine cases of Weil's disease (spirochetal jaundice) were diagnosed in Georgia by agglutination tests. Five patients showed definite rise of agglutinin titer during their illness. All patients recovered with no apparent after-effects. Clinically, all patients had malaise, initial chill, fever, headache, muscular pain, nausea, vomiting, and jaundice. Two showed a hemorrhagic tendency with the presence of petechiae, subconjunctival hemorrhages, retinal hemorrhages, and hematemesis. Laboratory reports of the patients revealed an increase in total leukocytes, increase in serum bilirubin, decreased liver function, and, in one, a rise in the blood nonprotein nitrogen. Spirochetal jaundice occurs sporadically and may be considered an occupational disease. Of the patients in this series, one was a garbage collector, one a dairy worker, one a groceryman and caretaker, one a poultry market worker, and two were mechanics. All of these occupations are conducive to skin abrasions and possible contact with infected rats and dogs. The absolute diagnosis of spirochetal jaundice can be established only by specific laboratory methods. These are direct microscopic demonstration of Leptospira in the blood or urine, guinea pig or deer mouse inoculation with blood or urine or both, culture of Leptospira from the blood or urine specimens of the patient, serologic reactions, and demonstration of the Leptospira microscopically in stain sections of the viscera of patients who died. The author believes that the disease is commoner than supposed.

The Diffuse Vascular Lesion of So-Called "Thrombotic Thrombocytopenic Purpura." H. W. March. Circulation 10:43-55 (July) 1954 [New York].

March emphasizes in a review of the clinical, laboratory, and therapeutic aspects of "thrombotic thrombocytopenic purpura," that the true character and morbid anatomy of the disease went long unappreciated, because it was confused by clinicians with idiopathic thrombocytopenic purpura, and because pathologists interpreted the verrucal masses in dilated arterioles and capillaries as bland platelet thrombi. More recent observations suggest that primary damage to the terminal portions of the vascular system in many organs is the essential pathological process in the disease for which the term "thrombocytopenic verrucal angionecrosis" was considered to be a more appropriate name. The histogenesis of verrucal angionecrosis is well-demonstrated in the case of a 29-year-old man who was admitted to the hospital with a characteristic history of headache, bleeding gums, and sore throat for three days, and hematuria of 24 to 48 hours' duration. The patient ran a febrile course, rapidly deteriorated and died in coma on the fourteenth hospital day. At necropsy there were subconjunctival ecchymoses and purpura of the extremities. Hepatosplenomegaly was present. Petechiae and purpuric spots were observed throughout the viscera, especially the heart and the kidney. Representative sections from these two organs were employed to illustrate the development of the vascular lesions from the early stage of intramural vascular necrosis to the fully developed and propagated "bland thrombus," consisting almost exclusively of degenerated, swollen collagen, with only a negligible contribution of plasma, fibrin, and formed elements from the blood. Although no abnormal globulin "factor" was isolated in this disease, certain clinical and hematological characteristics suggest that it is related to diseases like acquired hemolytic anemia, thrombocytopenic purpura, and disseminated lupus erythematosus, in which abnormal immunologic mechanisms are demonstrated. Verrucal angionecrosis is uniformly fatal. Results of splenectomy were discouraging, and corticotropin (ACTH) and cortisone had no truly beneficial effects.

The Clinical Value of Needle Biopsy of the Liver. S. Brandstaedter. Harefuah 46:1-3 (Jan. 1) 1954 (In Hebrew; English Summary) [Jerusalem, Israel].

Two hundred liver biopsies were performed with the Vim-Silverman needle and the following conclusions drawn from the series: 1. Needle biopsy of the liver is not a universally applicable diagnostic procedure, nor is it without danger. Its principal application is in cases in which the clinical picture is inconsistent with the laboratory findings. 2. Contraindications to needle biopsy include biliary obstruction and cholangitis. 3. In cases of infectious hepatitis there is greater conformity between biopsy and laboratory data than between the clinical picture and histological findings. 4. In cases of cirrhosis, striking inconsistencies occur between the clinical picture, the biopsy, and the results of laboratory studies. 5. Needle biopsy is not helpful in the diagnosis of amebic hepatitis, brucellosis, or leptospirosis. Cases in the series worthy of special mention are: (1) confirmation of a case of kala-azar by the liver biopsy; (2) the finding of malarial pigment in two cases of prolonged fever in which repeated thick drop preparations were negative for parasites; (3) the finding of specific granulomas in four out of nine cases of tuberculosis of various other organs; (4) the finding, in one of the four cases of tuberculosis mentioned above, of amyloidosis in the liver (the patient had tuberculosis of the spine with hepatosplenomegaly); (5) the finding, in a case of erythremic myelosis, of erythrocyte and lymphocyte production in the liver; and (6) in a case of jaundice and hepatosplenomegaly of long duration with normal liver function tests, the finding of an essentially normal liver architecture with a substance in the liver cells yielding the staining reaction of hemofuscin.

Pathogenesis of Pernicious Anemia. Å. Wilton. Nord. med. 51:773-777 (June 3) 1954 (In Swedish) [Stockholm, Sweden].

Disturbances in the development of erythrocyte tissue due to lack of the anti-pernicious-anemia factor are characterized by increased mitotic activity, mitotic shifting to the left, and abnormally slow cell maturation. The life period of the red blood corpuscles is shortened. The increased new cell formation causes disturbance of the red bone marrow cells, increased hemoglobin production, and increased migration of red bone marrow cells to the blood. The increased migration is not sufficient to compensate for the shortened lifetime of the blood cells. The blood cell count and, thus, the hemoglobin content of the blood decrease as the deficiency and disturbance in development increase. In pernicious anemia both hemoglobin production and hemoglobin destruction are greater than under physiological conditions. If the anti-pernicious-anemia factor is administered, new cell formation is reduced, there is mitotic shift to the right, and cell maturation is accelerated. In pernicious anemia in remission a change in tissue development occurs like that in ontogenetic development of erythrocytes. The mitotic shifting to the right leads to decrease in the size of the blood cells and, thus, decrease in the color index. So-called crises arise, first among the least mature red bone marrow cells, then in turn, according to the degree of maturity, in the other cell groups. The reticulocyte crisis comes last. On lack of the anti-pernicious-anemia factor the mitotic disturbance occurs first among the most mature, dividing red bone marrow cells, and, on administration of the factor, disappears last among the most mature cells, indicating that the need of the anti-pernicious-anemia factor is greater in cells in the mature group than in less mature cells.

Lung Neoplasms from the Endoscopist's Standpoint. J. B. Gregg. South Dakota J. Med. & Pharm. 7:203-209 (July) 1954 [Sioux Falls, S. D.].

Gregg presents observations on the diagnosis of pulmonary neoplasms at the U. S. Veterans Hospital in Iowa City from April, 1953, to March, 1954, inclusive. During this period 190 bronchoscopic examinations were performed on 168 patients. Forty-two of these bronchoscopies were done on patients who had lung neoplasms. Nine of these were repeat bronchoscopies. Thirty-eight new lung neoplasms were diagnosed. Of these, one was diagnosed primarily at autopsy; in one the diagnosis was made at thoracotomy with roentgenographic evidence of a peripheral lung tumor; in four the diagnosis was not suspected or the patient was moribund and diagnostic procedures were not done; and in 32 patients bronchoscopic examination was performed. In the majority of cases some roentgenographic evidence of pulmonary abnormality was found before bronchoscopic examination was performed. The most common roentgenographic findings were: atelectasis, "pneumonitis," mediastinal enlargement, isolated peripheral lung parenchymal lesion, tracheal shift, and pleural effusion. The author stresses the importance of teamwork between internist, roentgenologist, and bronchoscopist in the diagnosis of pulmonary neoplasms. In his experience, bronchoscopy combined with pinpoint endobronchial cytological aspiration biopsy has proved an accurate, easy method for early diagnosis of lung cancer. Four representative cases are briefly described. The author stresses among other factors that any chest lesion not resolving in about three weeks in a person over 35 years of age, especially a man, should be investigated thoroughly. Too frequently the diagnosis of lung cancer is delayed from two to six months, while the patient has been treated for "pneumonitis, atypical pneumonia, virus pneumonia," and similar things. Symptoms and physical and roentgenologic changes are often minimal in early pulmonary neoplasms. Refinements in roentgenoscopy and cytological techniques favor earlier diagnosis, but unfortunately in too many cases these procedures are not carried out until the patient is beyond cure. The only possibility of cure for pulmonary neoplasms is by prompt, early diagnosis and adequate surgical excision of the tumor along with the neighboring lymphatic system.

Beta-Naphthyl-Dichlorethylamine in Maligant Diseases, Especially Hodgkin's Disease. A. Videbaek and S. Kaae. Ugeskr. læger 116:943-947 (June 24) 1954 (In Danish) [Copenhagen, Denmark].

Twenty-five patients with malignant lymphogranulomatosis and seven patients with other malignant diseases were treated orally with Haddow's cytotoxic substance R_4, (β-naphthyl-dichlorethylamine). The daily dose varied between 200 and 800 mg. The therapy can be maintained for a long time. As a rule the clinical effect appeared in the course of from one to three weeks and in some cases was striking. Especially in Hodgkin's disease, the treatment is more effective than is treatment with nitrogen mustard, and it is particularly to be considered as a supplement to or a substitute for roentgen treatment when the latter is not applicable because of the spread of the disease (so-called radioresistant cases). Treatment is oral and inexpensive. Ambulant treatment can be carried out. There are no immediate side-effects. Larger doses can provoke nausea and long-continued treatment can induce leukopenia, thrombocytopenia, and anemia. These complications practically always develop slowly and disappear when the substance is withdrawn or are controlled by chemotherapy and blood transfusions.

Connective Tissue Manifestations of Neoplastic Disease. J. Lansbury. Geriatrics 9:319-324 (July) 1954 [Minneapolis].

Lansbury reviews previous reports that indicate that a relationship exists between various types of malignant diseases and connective tissue diseases. The importance of this relationship, both as an aid in the diagnosis of cryptic malignant disease and, as a possible clue to the nature of the dyscollagenoses and the malignant process, has not been adequately stressed. The concurrence of malignant lesions with the dyscollagenoses is not coincidental, since the connective tissue reactions may disappear after resection or irradiation of the malignant lesion. The connective tissue reaction may take the form of secondary hypertrophic osteoarthropathy (Bamberger-Marie syndrome), especially in the case of bronchogenic carcinoma or of a variety of the dyscollagenoses, most common of which are arthritis and dermatomyositis. Secondary hypertrophic osteoarthropathy is characterized by new periosteal growth of the long bones, increased size of the extremities, clubbing of fingers and toes, and redundancy of the skin of the face and skull. The joints may be swollen and deformed. It is questionable whether Bamberger and Marie were correct in assuming that in advanced cases the process was entirely distinct from acromegaly. The mechanism by which malignant lesions and the connective tissue disorders are related is unknown. Speculations include infection, allergy, hormones, metabolism, and neurological reflexes. It is also possible that both the malignant lesion and the connective tissue diseases are secondary to some other, unknown, primary cause. An unexplained onset of atypical arthritis, of dermatomyositis, or other dyscollagenoses in middle age should always suggest a previously unrecognized malignant lesion. A meticulous study, with radiological and endoscopic aids, should be made to exclude a malignant lesion. The yield of curable malignant lesions will probably be small but of inestimable value to the individual patient.

KZ (Concentration Camp) Syndrome: Sequels of Famine Dystrophy After Eight Years. K. Hermann and P. Thygesen. Ugeskr. læger 116:825-836 (June 3) 1954 (In Danish) [Copenhagen, Denmark].

The KZ (concentration camp) syndrome is a chronic stage of weakness as the result of famine, due to food deficient in calories and especially in protein, in German concentration camps during the World War II. The decisive lesion of famine dystrophy is the negative nitrogen balance. The KZ syndrome is in general to be regarded as an organic injury that also affects the brain. The syndrome is made up of a number of somatic symptoms—asthenic and vegetative symptoms predominating—and of mental symptoms. No symptom is pathognomonic, but there is an almost photographic likeness in the symptoms from patient to patient. Fatigue dominates the physical symptoms.

Most of the patients never regain their old weight. Two-thirds of the 120 earlier KZ prisoners reported on have lost over 35% in weight. In about half the cases the persisting weakness is expressed in lowered resistance to infection. The appearance of about one-fourth of the number is older than the age warrants. The deleterious effect of the condition can be measured only by the incapacity for work that the syndrome as a whole imposes on persons who before deportation did not show signs of defective social adjustment or psychic deviation that might presumably predispose to social maladjustment. The extent of the incapacity can be lessened by suitable treatment and occupational measures, but a limited capacity for work must as a rule be expected because of the mainly irreversible character of the condition.

SURGERY

Malignancy in Carotid Body Tumors with Presentation of a Proved Case of Metastases to the Lungs. F. M. Turnbull. West. J. Surg. 62:382-390 (July) 1954 [Portland, Ore.].

A right radical neck dissection was performed in a 48-year-old man for removal of a mass of 10 years' duration in the right upper neck region that had progressively and slowly increased in size without pain or discomfort, except that for two months before surgical intervention the patient noted a dull ache around the right mandible at night. He had no syncope or weight loss. A needle plug biopsy taken before the operation revealed a neurofibroma showing early sarcomatous changes. On surgical intervention the vagus nerve was found to run through the tumor, and the internal and external carotid arteries were completely enveloped by the mass. The internal carotid artery was occluded by pressure from the surrounding growth where it approached the base of the skull. Both arteries were resected with the tumor and the common carotid artery was ligated. Pathological examination of the surgical specimen revealed a malignant (sarcomatous) carotid body tumor. The ostoperative course was uneventful. Seven weeks after the peration the patient returned to the hospital with a tender mass eneath the mastoid process and behind the mandible in the scar of the old incision site. Another mass was found in the right submental area. The patient complained of pain, weight loss, and poor appetite. One month later resection of the recurrent tumor was done, but tumor was left at the base of the skull. The pathological report was one of carotid body tumor with malignant changes. The patient died four months later; necropsy revealed a pattern distinctive of fibrosarcoma originating in the right side of the neck, metastatized by way of the hematogenous route to the lungs and by direct extension through the foramen lacerum to the dura mater. It was noted that the vascularity of the sarcomatous elements in the metastatic lesions lent a pattern suggesting the vascular component of the stroma of the carotid body. It is reasonable to predict, in the light of the evidence presented, that if all carotid body tumors were left to pursue their natural course of growth undisturbed, a significant proportion of cases would eventually be expected to cause serious trouble through continued local growth, regional lymphatic spread, or distant dissemination. No spontaneous regression or cure was ever reported, and similarly, all reports of control with irradiation were unconvincing. Malignant change can and does occur in carotid body tumors, and it is apparent that a certain latent period is necessary before this change occurs. No correlation exists between the microscopic appearance of the tumor and its prognosis. Surgical removal of all carotid body tumors is recommended, the earlier the better. It is possible to remove these tumors without interrupting the continuity of the arterial stream if the dissection is carried out in the plane of the arterial adventitia. In the event that the lumen of the artery is inadvertently entered in the course of removal, ligation should never be resorted to. Restoration of continuity of the arterial stream by simple closure of the hole, primary end-to-end anastomosis, and insertion of an arterial homograft or venous autograft are recommended, in that order, as solutions to this complication.

Results of Pulmonary Valvotomy and Infundibular Resection in 100 Cases of Fallot's Tetralogy. M. Campbell, D. C. Deuchar and R. Brock. Brit. M. J. 2:111-122 (July 17) 1954 [London, England].

This highly detailed report is a comparison of the results obtained in 100 patients with Fallot's tetralogy who underwent one or both of the direct operations for augmenting pulmonary circulation (pulmonary valvotomy and infundibular resection) with those in 165 patients reported earlier who had anastomotic operations (almost always subclavian-pulmonary anastomosis). Sixty-one of the 100 were followed up since the beginning of the year 1953, thoroughly reexamined, and their results analyzed. Forty-five of the 100 had infundibular resection only; all the others had pulmonary valvotomy, but 18 needed infundibular resection as well. Two-thirds of the entire group obtained good or very good results, i. e., they now lead lives that are quiet, but nearly normal. One-sixth showed slight improvement, and the remaining sixth died as a result of the operation. In comparing the two direct methods, it must be mentioned that valvotomy had a mortality of 11% in this series and the other procedure one of 18%. On the other hand, infundibular resection rarely fails to produce a good result in those who survive, while after valvotomy, alone or combined, there is a larger proportion of patients who show only slight or moderate improvement. Functional improvement is as great after direct, as after anastomotic, operations. In addition, there is the same reduction in cyanosis, polycythemia, and hemoglobin percentage, the mean in those with good and very good results falling from 128 to 103%. Improvement in color and finger clubbing may be even greater than after anastomotic operations; some patients lose their cyanosis at rest and a few even after exertion. In these, catheterization shows that the oxygen saturation of the arterial blood has become normal and the right-to-left shunt reversed. The heart tends to enlarge after direct operations as after anastomotic operations, the cardiothoracic ratio rising from a mean of about 49 to 53.5% within a few months of operation and remaining at or a little below this level during the next few years. When the clinical result is particularly good and the cyanosis abolished, the heart may increase in size more than usual, as after an unusually large anastomosis. It would be optimistic to expect the improvement that follows either of these operations without some increase in the size of the heart, because the right ventricle is still working against the systemic pressure, and the patient is leading a much more active life. It means that for the patients with the best results the physician should act as a restraining influence, persuading them to lead a reasonably quiet life if they wish to keep their improvement as long as possible. So long as the ventricular septal defect remains, the right ventricle will have increased work and will be exposed to the risk of strain. Future difficulties, however, are no reason for withholding the great advantages that anastomotic and direct operations can give, though clearly the treatment of Fallot's tetrology will not be ideal until the ventricular septal defect can be closed.

Homologous Skin Graft Used as Life-Saving Expedient to Promote Thrombosis of Bleeding Wound in Patient with Hemophilia. H. Conway and R. B. Stark. Plast. & Reconstruct. Surg. 13:446-450 (June) 1954 [Baltimore].

Conway and Stark point out that homologous transplants of skin in the mouse will produce thrombosis in the blood vessels in the underlying recipient bed. This response will occur from 1 to 18 days after transplantation. It was felt that this phenomenon might be utilized in excessive bleeding, such as in the patient with hemophilia reported by the authors. The patient, aged 23, had been previously hospitalized 18 times for episodes of uncontrolled hemorrhage. There were numerous episodes of hemarthroses of both knees, the elbows, and the joints of the hands. On several occasions he had had subarchnoid hemorrhages, hematuria, and bleeding following extraction of teeth. When the patient caught his right forearm in the door of a car the arm became swollen. Progressive blanching of the digits, increasing nerve palsies, and weakening of the radial pulse indicated the presence of an expanding hematoma. The forearm was incised and the antebrachial fascia was opened. The circulation returned to the hand but the gaping wound bled, slowly, and the patient was sustained by multiple transfusions of fresh blood and antihemophilic plasma. After four days, in spite of persistent slow bleeding from the wound, a graft was taken from the patient's father and transplanted to the wound of the forearm. This homoplastic skin graft was used because an autogenous graft would leave a bleeding donor site, and because homoplastic grafts cause thrombosis of the vessels in the bed of the recipient. The bleeding from the arm ceased. Four weeks later the homograft showed signs of dissolution. Small marginal wounds developed and started to bleed. Forty days after homotransplantation, the homoplastic graft was excised and an autograft (from the patient's thigh) was transplanted to the wound of the forearm. The daring that prompted the cutting of an autogenous skin graft was supported by Reznikoff's management of the hematological crisis. One hundred to 150 cc. of freshly drawn whole blood were given every hour for 24 hours on the theory that the transfused blood would supply sufficient normal clotting mechanism to achieve primary healing of the donor site and the adherence of the graft. The autoplastic graft healed, and the patient left the hospital with all wounds healed.

Vena Cava Syndrome: Three Cases Probably Due to Thrombosis. A. H. Andresen, A. T. Hansen, E. T. Husfeldt, A. Pedersen and G. Thomsen. Ugeskr. læger 116:785-792 (May 27) 1954 (In Danish) [Copenhagen, Denmark].

In the first of three cases of occlusion of the superior vena cava, regarded as sequels of thrombosis, there had been blunt trauma of thorax with extensive bleeding into skin. In the second case congenital malformation of the vein cannot be excluded. Vaccination against diphtheria with a febrile course seemed to have initiated the symptoms in the third case, presumably by having caused a mediastinitis. Venous angiocardiography, especially angiography done selectively with a catheter, gave detailed information concerning the site and extent of the occlusion. The prognosis for life in occlusion of vena cava superior is not absolutely unfavorable, provided that the disorder that led to the development of the syndrome has been cured or has entered into a quiet phase. Gradual improvement in the condition can apparently be expected, probably as an expression of more and more sufficient collateral circulation. In order to normalize the circulation more completely, operative treatment is recommended if the conditions allow. Thoracotomy was done in two of the cases; one patient had anastomosis between vena azygos and the right auricle.

NEUROLOGY & PSYCHIATRY

Barbiturate Addiction Simulating Spontaneous Hyperinsulinism. R. A. Hunter and H. P. Greenberg. Lancet 2:58-62 (July 10) 1954 [London, England].

Spontaneous hyperinsulinism due to islet-cell tumor of the pancreas is more frequently suspected than found. Symptoms and signs are vasomotor, psychiatric, and neurological, and occur in paroxysmal attacks. At first they may resemble one of the commoner psychiatric disorders. The authors draw attention to the reverse situation, namely, to a group of primarily psychiatric cases presenting symptoms that mimic closely those of spontaneous hyperinsulinism. Three patients under psychiatric care were referred for detailed physical investigation because their symptoms pointed to islet-cell tumor. Only much later was information forthcoming that explained their mysterious condition; they were drug addicts, who had been taking quantities of barbiturates obtained from outside sources unknown to their psychiatrists. Patient 1 had started barbiturate sedation, later combined with amphetamine, for vertiginous attacks. In retrospect these attacks may have been due to unrecognized barbiturate intoxication. Patient 2 was a known morphine addict who diagnosed himself as suffering from islet-cell tumor. He was believed cured of addiction at the time of admission. Patient 3 had frequently consulted physicians with minor complaints and had at times been given barbiturates. As she gave a history of moderate, long-standing, psychiatric disturbance, occurring mainly in attacks, her symptoms were at first thought to be a continuation of these. Patient 1 had obtained barbiturates from 11 different physicians at the same time, as well as through a friend; patient 2 by prescribing for himself; patient 3 from her physicians as well as from an unknown source in her hospital. In all three cases the diagnosis became clear only some time after the patients had been investigated in hospital. Their subsequent history is not encouraging. Patient 1, after a period of months spent mostly off work, finally gave up her post and continued with drugs; patient 2 died as the result of consuming excess alcohol while taking disulfiram (Antabuse); patient 3 gave up nursing. The biochemical and electroencephalographic aspects of chronic barbiturate intoxication and withdrawal are discussed, and a case is cited in which sudden withdrawal of barbiturates led to epileptic fits. It is also suggested that electroencephalographic abnormalities in psychiatric patients may sometimes be due to barbiturate effects. Three possible explanations are suggested for periodical exacerbations in the symptoms of barbiturate addiction: (1) variations in the amount of barbiturate taken; (2) neglect of dietary requirements because of anorexia; and (3) lack of supply causing abstinence symptoms in the form of weakness, anxiety, anorexia, insomnia, tremor, disturbances in cardiovascular adjustments on standing, convulsions, slight fever, and a psychosis. Barbiturates are the commonest form of drug addiction today, and are also the commonest drugs used for suicidal purposes. Long-continued consumption of barbiturates in itself induces insomnia, depression, and symptoms of anxiety. The eventual result is exacerbation of those very symptoms for which these drugs are most commonly prescribed. In such circumstances increases in drug dosage will in turn lead to correspondingly more severe withdrawal symptoms superimposed upon those of intoxication and the original illness. Failure to recognize this vicious circle may result in deterioration of the patient's condition sufficient to precipitate suicide.

Convulsions During Treatment with Corticotropin or Cortisone. D. J. van Zaane. Maandschr. kindergeneesk. 22:210-215 (June) 1954 (In Dutch) [Leiden, Netherlands].

Van Zaane reviews cases of convulsion during treatment with cortisone or corticotropin previously reported, chiefly in the American literature, and cites a case of his own. A girl, aged 7, was treated with corticotropin for rheumatic fever. On the first day of treatment she was given two intramuscular injections of corticotropin of 15 mg. each, then 15 mg. of corticotropin four times daily for four days. In addition, 100,000 units of penicillin were given four times daily. She was on a salt-free diet, high in potassium. Blood pressure, urine, blood chemistry, and eosinophils were repeatedly examined during the therapy. The rheumatic fever responded favorably to the corticotropin therapy, the temperature decreased to normal, and joint pains subsided on the day after onset of the treatment. On the fifth day of therapy the child had severe convulsions, which were controlled with sedatives after several hours. The convulsions were followed by delirium with screams, kicking, and striking. Later, optical hallucinations appeared. After four days of status epilepticus the child returned to normal status, except for nocturnal enuresis. Treatment with corticotropin was replaced by treatment with sodium salicylate. It is believed that the convulsions were the direct result of the corticotropin treatment, and it is suggested that electroencephalographic records be made at regular intervals during treatment with corticotropin or related drugs. Treatment should be stopped as soon as slow or pointed waves appear in the electroencephalogram.

Poliomyelitis and Water Supply. G. M. Little. Canad. J. Pub. Health 45:100-102 (March) 1954 [Toronto, Canada].

An explosive exacerbation of a poliomyelitis epidemic in Edmonton occurred at a time when the preceding epidemic curve and the lateness of the season gave reason to believe the epidemic was subsiding. The cases of this late episode were distributed uniformly among the population. This distribution, in such a brief space of time, did not conform to the usual spread from contact infection. A possible reservoir of infection was present in a town upstream from which inadequately treated sewage had access to the Edmonton water supply. Ordinary chlorination of water is a doubtful protection against the virus. Epidemiologically, this series of events suggests that Edmonton has suffered a water-borne outbreak of poliomyelitis. It provides only circumstantial evidence but is recorded in the hope that cumulative evidence may help to clarify the picture.

Poliomyelitis Epidemic in Winnipeg, 1953: Epidemiological Study, Including the Use of Gamma Globulin. R. G. Cadham. Canad. J. Pub. Health 45:185-194 (May) 1954 [Toronto, Canada].

In the summer months of 1953 Winnipeg, Manitoba, experienced a severe epidemic of poliomyelitis, with a case rate of 318 per 100,000 population. Localization of cases in certain areas of the city was noted in the later stages of the epidemic. Paralysis developed in 59% of the reported cases. The death rate was 4.6%. There has been a shift in the age incidence with a higher percentage of cases occurring among the older age groups. Whereas in children under 9 years of age the death rate was 1.2%, it was 28% in those over 40 years. No explanation for this high death rate in the age group over 40 is forthcoming. Another unexplained feature is that all deaths in the age groups up to 9 and over 40 were in males. There were 45 instances (6%) in which more than one case occurred in the same home; in 43 homes two cases occurred, in one home three cases, and in one home four cases. The incidence of poliomyelitis among contacts who received gamma globulin was lower than among the contacts who did not receive gamma globulin. Furthermore, the incidence of paralysis was much higher among the contacts who had not received gamma globulin.

Syndrome of Anterior Hypophysial Insufficiency: Diagnosis and Treatment. E. B. del Castillo. Rev. Asoc. méd. argent. 63:51-55 (March 15-30) 1954 (In Spanish) [Buenos Aires, Argentina].

The syndrome of anterior hypophysial insufficiency is caused by the destruction of the anterior lobe of the hypophysis by tumors, ischemic necrosis, and other pathological conditions of the hypophysis or of the hypophysial regions, or surgical removal of the hypophysis. The symptoms and psychic disorders correspond to those commonly observed in the so-called hypophysial cachexia. The name hypopituitarism of Simmonds-Sheehan's type is more proper, as cachexia is not constant. The syndrome is associated with depression of the basic metabolic rate, diminution of the protein reserves, changes in the metabolism of carbohydrates, an extreme sensitivity of the patient to insulin, and a tendency to the development of hypoglycemia. The course of the syndrome depends on the degree of insufficiency of gonadal, thyroid, or corticosuprarenal hormonal functions. The syndrome is rare in men. In women it may develop due to an infarct with consequent ischemic hypophysial necrosis from hemorrhage during labor and obstetric shock. Lactation does not appear, the breasts become flaccid and the nipple and the areola lose the pigment, amenorrhea is permanent, and the genital organs and the uterus are atrophic. The general symptoms and psychic disorders correspond to those of hypopituitarism not following labor. The diagnosis is made on the symptoms and the relation of the syndrome to the complications of labor. Hypopituitarism of the Simmonds-Sheehan's type can be differentiated from anorexia nervosa by its relation to labor, its organic origin and noncachectic character; from thyroid myxedema by the different response to thyroid treatment; and from adrenal cortical hypofunction (Addison's disease) by the relation of hypopituitarism to labor and the different type of cutaneous pigmentation seen in adrenal cortical hypofunction. The treatment of hypopituitarism caused by ischemic necrosis of the anterior lobe of the hypophysis is prophylactic; complications during pregnancy making the patients liable to collapse during or after labor should be prevented. If collapse occurs it calls for emergency treatment of shock and hemorrhage. Intercurrent or associated infections should be promptly controlled with antibiotics to prevent acute suprarenal crisis or a hypoglycemic coma. Saline and dextrose solutions, cortisone, and desoxycorticosterone by parenteral route should be administered. Chromophobic tumors of the anterior lobe of the hypophysis should be surgically removed or be treated with roentgen therapy to prevent or control pressure on the optic chiasm. The treatment of hypopituitarism consists of the administration of gonadotrophins, adrenocorticotropin, estrogens, androgens, and thyroid, as indicated for the predominant hormonal dysfunction. The treatment of hypoglycemic coma includes dextrose solution by intravenous route and administration of saline solution, cortisone, and desoxycorticosterone, and placing the patient in a bath of warm water to prevent lowering of body temperature.

PEDIATRICS

Idiopathic Hypercalcemic Syndromes of Infancy. K. G. Lowe, J. L. Henderson, W. W. Park and D. A. McGreal. Lancet 2:101-110 (July 17) 1954 [London, England].

Lowe and associates became interested in idiopathic hypercalcemia when they saw a severe case similar in many respects to the two described by Fanconi and others in 1952. Creery in 1953 described a possible third case of this syndrome and believed that his case and the two described by Fanconi and others were severe forms of the syndrome described by Lightwood and Payne in 1952 under the title of "idiopathic hypercalcemia of infants with failure to thrive." This illness usually develops at a few months of age and is manifested clinically by anorexia, vomiting, constipation, and loss of weight. The important biochemical features are hypercalcemia and a raised blood-urea level. In the severe case described here, the onset and the initial clinical features resembled those of either "infantile renal acidosis" or "idiopathic hypercalcemia of infants with failure to thrive." Though renal acidosis might have been present in the early part of the illness, regarding which there are no biochemical data, this diagnosis could not be entertained a year later, when strongly acid urine was obtained. If the initial illness was "idiopathic hypercalcemia with failure to thrive," then, at variance with Lightwood and Stapleton's concept of this as a wholly recoverable disease, this child's illness progressed steadily. It is possible that the same alternative of recovery or progressive deterioration that faces the child with renal acidosis may be expected for the infant with "idiopathic hypercalcemia." The pathogenesis of the severe type of idiopathic hypercalcemia of childhood remains obscure. Histological evidence from the renal biopsy specimen in the severe case does not support a diagnosis of primary renal disease; and it is difficult to see how primary renal disease could cause hypercalcemia. The severe changes could, however, be explained as the result of precipitation of calcium in the kidney due to the hypercalcemia. In describing the bone lesions, the author uses the term osteosclerosis in the conventional sense as indicating increased density. The parathyroid function was not investigated. Hypersensitivity to vitamin D was not excluded, but the vitamin was given in concentrated form only after onset of symptoms. The radiological appearances seen in the severe case have never been reported in hypervitaminosis D. Creery calls attention to the parallelism between hypercalcemic marasmus and the syndrome described in peptic ulceration when continued excessive intake of milk and alkalis leads to hypercalcemia, metastatic calcification, and, in some cases, osteosclerosis. The child with severe hypercalcemia had had small doses of alkaline medicaments before onset of symptoms. The six mild cases of hypercalcemia described here showed the same initial symptoms as the severe case, and in five of the cases the onset was during the first six months of life. All but one patient had been fed on National dried milk; four had had regular cod-liver oil supplements, another one had two doses. Two had taken magnesia regularly, two had it occasionally, one had two doses only, and one had none at all before the illness developed. Alkaline medication therefore is not a constant factor. Hypersensitivity to vitamin D does, however, merit attention as a possible factor in cause. Two of the children had received no supplementary cod-liver oil, but, as National dried milk contains at least 280 I. U. of vitamin D per ounce, even they had a daily intake of over 1,000 I. U. of vitamin D before the onset of symptoms. The authors believe that hypervitaminosis D (or hypersensitivity to doses of vitamin D usually well tolerated by infants) merits consideration as an etiological factor. Excessive administration of alkaline drugs might be an aggravating factor. An addendum states that the child with the severe form of hypercalcemia died. Necropsy revealed no adenoma or hyperplasia of the parathyroids, and the kidneys did not show the characteristics of chronic pyelonephritis.

Idiopathic Hypercalcemia in Infants with Failure to Thrive. R. D. G. Creery and D. W. Neill. Lancet 2:110-115 (July 17) 1954 [London, England].

This paper presents the clinical, chemical, and radiological features of 16 infants with idiopathic hypercalcemia and failure to thrive. It has been suggested that alkali medication might be a causal factor, but in the present series the syndrome developed in the absence of such therapy. Similarly there is no direct evidence to implicate previous pyelonephritis as a causal agent, and the pyuria commonly found is probably secondary in nature. Smith stated that ingestion of increasing amounts of calcium led to larger fecal losses but also to surprising degrees of increased retention and that the degree of retention depended mostly on the amount of calcium in the infant's diet, which is four to six times as great with cow's milk as with human milk. Stearns observed that retention of calcium was much greater when vitamin D was added. The constant causal factor in the reported cases was a high calcium intake from early infancy, usually associated with a more than adequate amount of vitamin D in the diet. The author suggests that to prevent this condition breast feeding must be encouraged, and unnecessarily large doses of vitamin D discouraged, especially when vitamin-fortified dried milks are being used. A rational therapy should include a diet low in calcium and free from vitamin D. Spontaneous recovery can confidently be anticipated. The immediate prognosis is good; all infants survived.

Congenital and Familial Afibrinogenemia: Based on Three Cases. L. Caussade, N. Neimann, M. Pierson and M. Manciaux. Presse méd. 62:1040-1042 (July 7) 1954 (In French) [Paris, France].

Congenital and familial afibrinogenemia is a pseudohemophilic disease that manifests itself in early childhood. Nineteen cases were found in the world literature, and three new cases are reported. They occurred in female siblings, the issue of a marriage between first cousins. The parents were both hypofibrinemic. Two brothers were healthy. The three sisters were aged 8½ years, 2 years, and a few weeks old, respectively, when the diagnosis of afibrinogenemia was made. A fourth sister had died from uncontrollable umbilical hemorrhage at the age of 2 days, and a fifth was hypofibrinemic. The mother had had three spontaneous abortions. The signs and symptoms of the disease are severe hemorrhages appearing in response to minor insults, and superficial ecchymoses and hematomas. The prognosis is poor, but not dire; only 7 of the 22 patients died before the age of 20. Hematologically speaking, the platelets, capillary resistance, and bleeding time are normal in most cases. There is virtually no limit to the coagulation time, blood from one of the authors' patients having been kept for two weeks with no signs of clotting. The sedimentation rate is extremely slow. The almost total absence of fibrinogen, and hence of fibrin, in the blood was shown by various techniques. The mode of transmission of the gene for afibrinogenemia is unknown. Therapy can be only symptomatic. Whole blood, plasma, and fibrinogen have all been used, but in each instance, the patient's blood soon returns to its former state. The difference between this condition and clinical and latent hypofibrinogenemia seems to be simply quantitative.

Review of 183 Cases of Rheumatic Fever, 1946-1952. W. Hirsch. Harefuah 46:28-29 (Jan. 15) 1954 (In Hebrew; English Summary) [Jerusalem, Israel].

One hundred eighty-three children with rheumatic fever were admitted to the children's ward of the Municipal Hospital in Tel Aviv from 1946 to 1952. One hundred fifty-five were between the ages of 5 and 12, 20 were under 5, and 8 were over 12. The number of admissions for this disease steadily increased from 18 in 1946 to 28 in 1952. There were nine deaths in all. Fourteen patients showed signs of chorea minor. The 183 patients were admitted a total of 373 times, indicating a high relapse rate. Of these 183 patients, 125 were admitted once, and 58 more than once (29 were admitted twice, 13 were admitted 3 times, 6 were admitted 4 times, 4 were admitted 5 times, 3 were admitted 6 times, and 2 were admitted 12 times). The average duration of hospital stay per admission rose from 22 days in 1946 to 33 days in 1952. There was a correlation between poor results of treatment and high frequency of admission to the hospital. Bed rest alone was a successful form of therapy in 39 cases. Salicylates were given to 51 patients for 10 days or less and to 53 for more than 10 days. Of these 104 children treated with salicylates, only 52 had normal sedimentation rates after treatment. Cortisone was used with excellent results in 12 patients for whom salicylate therapy had been ineffective or who had acute rheumatic carditis. The duration of hospitalization as well as the treatment used affected the results. Early discharge was apparently responsible for many relapses. If a convalescent home could be established, 20 beds would be ample to allow all the children in this series to convalesce for 33 days, a period equal to the average duration of hospital stay in 1953. It is believed that such a program would stabilize the health of these children and significantly reduce the relapse rate.

Type-12 Streptococci Associated with Acute Haemorrhagic Nephritis. M. J. Wilmers and A. C. Cunliffe. Lancet 2:17-18 (July 3) 1954 [London, England].

Evidence for an association of one type of group A hemolytic streptococci, type 12, was amassed from two groups of patients. Of the 11 patients in the first group, 10 had typical acute nephritis and yielded group A streptococci. Of the 23 patients in the second group, 21 were diagnosed as having acute glomerulonephritis and had group A streptococci. The diagnoses in the remaining three cases were doubtful. Twenty-eight (90%) of the 31 patients thus tested had type 12 streptococci; this percentage is greater than that explained by chance.

Retroperitoneal Myxolipoma: Report of Case in a Child Seven Years of Age. V. C. Pinto, A. G. Mattos, E. Pimenta and others. Pediatrics 14:11-15 (July) 1954 [Springfield, Ill.].

The fatty retroperitoneal tumors, although relatively rare, are of interest, because they are usually of large size and often present surgical problems. A boy was admitted to the hospital at 7 years of age. When he was 18 months old his mother noticed that his abdomen was enlarged, but nothing was found on examination. Two years elapsed before the child was examined again. The size of the abdomen had now greatly increased, but the boy presented no other disturbances. A malignant tumor was suspected, and surgical procedure was not advised due to the large size of the tumor and assumed poor prognosis. For three and one-half years the abdomen enlarged steadily, with no symptoms related to the urinary or gastrointestinal tracts. The patient had no complaints whatsoever. At 7 years of age the child's general appearance was that of an undernourished, pale boy. The abdomen was globular and greatly enlarged. At palpation, a large, painless, firm tumoral mass could be felt. The abdominal circumference was 89 cm. and the thorax measured 62 cm. At operation a rubbery, depressible, apparently not cystic mass, slightly adherent to the abdominal wall, was found. The adhesions were easily broken, but it was found that to remove the tumor entirely the blood supply of the involved jejunal loop would have to be sacrificed. This loop was resected (approximately 50 cm.) and an end-to-end anastomosis was made. The tumor was identified on histological examination as a myxolipoma. It weighed 12.8 kg. or more than half of the boy's weight (24.2 kg.). The boy was in good physical condition six months after the removal of the tumor.

DERMATOLOGY

Histological Modifications Induced by Isoniazid in Lupus Vulgaris. G. B. Marson. Minerva dermat. 29:219-221 (June) 1954 (In Italian) [Turin, Italy].

Seventeen patients with lupus vulgaris were treated with isoniazid at the dermatological clinic of the University of Padua. The patients, who were observed for from 10 to 16 months, tolerated well a total dosage of from 20 to 50 gm. of the drug. Some who were not benefited by other tuberculous medicaments improved greatly. Histological studies were made of biopsy specimens obtained before, during, and after the treatment. They revealed that, during the first four months of therapy, hyperkeratosis, acanthosis, and dermal edema disappeared, the aspecific cellular infiltration was reduced and confined, and the granuloma was substituted by an infiltrate that consisted mainly of histiocytes and epithelioid cells. Four to 10 months later, a rich neoformation of vessels and fibroblastic proliferation were present, and, 10 to 16 months later, the tissue involved by the disease was substituted by newly formed connective tissue. At the end of the treatment, however, all the specimens showed residual signs of inflammation, and in some of them giant cells and miliary foci of tuberculous nature were present between the new connective tissue. The author did not determine whether these residual inflammatory elements may become the starting point of a possible relapse of the disease or whether they are only the expression of a process that slowly will heal completely. Therefore, he suggests that the administration of isoniazid to patients with lupus vulgaris be continued even after an apparent recovery has been obtained. He feels that this drug is superior to vitamin D_2 in the treatment of this condition because of its bacteriostatic activity.

Hydrocortisone in Skin Disorders. E. Paulsen and B. Loland. Tidskr. norske lægefor. 74:417-418 (June 15) 1954 (In Norwegian) [Oslo, Norway].

From November, 1953, to March, 1954, 81 patients with skin diseases, mostly long-continued eczemas, often more or less resistant to therapy, were given local treatment with 1% hydrocortisone ointment. The agent seems to be a valuable adjuvant in the treatment of eczemas, both the acute vascular eczemas and the more chronic dry eczemas. On the whole it produces the same favorable effect as that achieved by general treatment with corticotropin (ACTH) and cortisone and at the same time the undesirable side-effects of these substances are avoided. The effect of the hydrocortisone ointment is apparently more morbidistatic than curative, but it can contribute to the cure of even stubborn eczema by suppressing itching and vascularization and thus breaking the cycle that keeps up the eczema. Because of the ease of application many eczemas that formerly required hospital treatment can now equally well be given ambulant treatment. For the time being, extensive use of the agent is prohibitive because of the cost. Hydrocortisone ointment is, therefore, best suited for the treatment of eczemas of smaller extent where other therapy is without effect.

UROLOGY

Prostatic Cancer: XI. Early Prostatic Cancer Diagnosed by Arbitrary Open Perineal Biopsy Among 300 Unselected Patients. P. B. Hudson, A. L. Finkle, J. A. Hopkins and others. Cancer 7:690-703 (July) 1954 [Philadelphia].

The absence of significant symptoms and the inadequacy of physical examination in detecting prostatic cancer prompted this clinical study of 300 men (the Bowery Series) subjected to open surgical biopsy of the posterior prostate. None of the 300 patients studied had spontaneously sought medical care or advice for prostatic or other disease. Frozen-section diagnosis proved practical in the clinical management of these patients. A total of 39 adenocarcinomas was detected, whereas only nine patients with carcinoma (23%) had findings at rectal palpation suggestive of carcinoma during the preoperative evaluation. The authors do not believe that rectal palpation is an adequate method in the early diagnosis of cancer of the prostate, since induration is not an early, but a late, symptom. Open surgical biopsy is effective and a relatively simple procedure causing no loss of continence or potency. It should be carried out before conservative prostatectomy in order to detect the cancers that are not infrequently present within what appears to be a benign hypertrophy. It is suggested that routine open prostatic biopsy with frozen and permanent sections be performed in every case of prostatic enlargement.

Nonspecific Urethritis: Is Mycotic Infection Important? G. Auckland and W. J. Preston. Brit. J. Ven. Dis. 30:81-87 (June) 1954 [London, England].

Nonspecific urethritis was found to be quite prevalent in Britain. Auckland and Preston believe that this insidious, highly prevalent, and perhaps incurable disease, which is the source of much ill health, demands organized investigation. These authors are concerned with the possibility that fungus elements found in urethral and prostatic secretions and in urine may indicate that mycotic urethritis is far more common than was previously supposed. At a venereal disease clinic in Manchester 722 new male patients and 475 new female patients were observed in the course of a year, and 120 of the men and 81 of the women had gonorrhea. Thirty men and 55 women of those who were free from gonorrhea showed microscopic evidence of fungus elements in urethral, prostatic, or cervical secretions, or in the urine; in addition, six men had gonorrhea and fungus. Thus 1 in 20 of new male patients and over 1 in 10 of the female patients exhibited evidence of fungus infection in the genitourinary tract. The authors concern themselves only with the 36 male patients. Fungus elements were found in urethral smears only in 15 cases, in urine only in 6 cases, in prostatic secretion only in 2 cases, in urethra and urine (not necessarily at the same time) in 12 cases, and in prostate and urethra in 1 case. At least half of the patients were examined for Trichomonas infection, but the results were always negative. Numerous culture slopes of Sabouraud's glucose-agar medium were inoculated with material from the urethra and urine in microscopically positive cases. The large number of different strains of fungi included Candida albicans, Penicillium, white yeast, rhodotorula, Aspergillus, C. sitophila, and C. krusei. Many of these were classified as contaminants by the mycologist, but the authors feel confident that these were not airborne contaminants, although they agree that it is arguable whether they were pathogenic or nonpathogenic. These fungi may be responsible for disease in the genitourinary tract. Attempts were made to eradicate the fungi by various methods, such as changing the pH, or by irrigation with substances of fungicidal action. Improvement did seem to follow a course of treatment in some cases, but the cyclic nature of the condition made it difficult to assess results. It was also noted that some patients who were seen on many occasions showed fungal elements only at infrequent intervals, which suggests that perhaps the growth and multiplication are intermittent, depending on the presence of suitable conditions. This feature is observed in fungus infections in other parts of the body. Tinea pedis is often an intermittent disease, revealing itself as outbreaks of interdigital scaliness and peeling. Given suitable conditions of warmth, moisture, correct nutritional requirements, and absence of antagonistic bacteria, the fungus multiplies and gives rise to gross clinical signs and symptoms. It may well be that a similar sequence of events occurs in the genitourinary tract, the fungi only making their presence felt when all the factors necessary for growth are present together. The authors conclude that mycotic urethritis is far commoner than has hitherto been thought, but it will require much more investigation.

OPHTHALMOLOGY

Pathological Basis of Retrolental Fibroplasia. N. Ashton. Brit. J. Ophth. 38:385-396 (July) 1954 [London, England].

Ashton presents the pathological features of the early stages of retrolental fibroplasia as observed in four representative cases. His conclusions are in accord with the widely accepted view that retrolental fibroplasia is a primary retinal disease of noninflammatory origin, which results from disordered retinal vascularization. Its development and course take place in the following three pathological stages: (1) proliferation of vasoformative tissue, consisting of endothelial and mesenchymal cells in the inner layers of the retina, with early eruption of the tissue through the internal limiting membrane into the vitreous; (2) commencing retinal detachment, extension of fibrovascular tissue into the vitreous, and formation of fibrous strands (new vessels may appear on the iris at any time during stages 1 and 2); and (3) total retinal detachment and formation of dense retrolental fibrous membrane, followed by late atrophic changes. Since the basis of the disorder is merely an aberrant overgrowth of the developing retinal vessels, it is not improbable that there may be a variety of precipitating causes, but the vast majority of cases consist of premature babies who have the disease postnatally in relation to oxygen therapy.

Effect of Oxygen on Developing Retinal Vessels with Particular Reference to the Problem of Retrolental Fibroplasia. N. Ashton, B. Ward and G. Serpell. Brit. J. Ophth. 38:397-432 (July) 1954 [London, England].

In an attempt to clarify the cause of retrolental fibroplasia an experimental investigation was carried out on the influence of varying concentrations of oxygen on the developing retinal vasculature in the kitten, which is comparable to that in man, except that in the kitten the vascular network does not reach the periphery of the retina until about three weeks after birth, so that the degree of retinal vascularization in the full-term kitten at birth, and in the ensuing three weeks, is comparable to that in the premature baby. A total of 121 kittens and 41 mother or foster-mother cats were used in the preliminary study and in the 32 experiments reported here. It was found that high concentrations of oxygen at atmospheric pressure induce in the growing retinal vessel of the kitten a type of vasoconstriction that progresses to complete obliteration of the vessels. This phenomenon is apparently confined to the developing retina. The severity of vaso-obliteration is inversely proportional to the maturity of the vessels, and obliteration cannot be produced once the retinal vasculature is mature; it is directly related to the duration of exposure to oxygen, and it takes about 36 hours; it is directly related to the concentration of oxygen, and concentrations below 35% have little or no effect in the most sensitive age groups. On transfer to air the obliterated vessels only partially reopen, producing hemorrhages and a grossly abnormal vascular pattern. This partially reopened network is inadequate to nourish the retina, and profuse vasoproliferation develops. When obliteration has been total, the retina is revascularized from the disk, and those vessels that reopened disappear; the new ingrowth consists of a dense circular mass of vessels, extends into the retina in a profuse and disordered manner, and glomerular tufts and vascular loops grow into the vitreous. Eventually the whole retina is revascularized, arteries and veins differentiate, and the intravitreal vessels disappear. Retinal detachment does not occur, and, apart from acute-angled folds in the retina, the normal histology is restored, and vision is retained. The fundus picture, however, is grossly abnormal. Several factors that might influence the above course of events were studied. In prolonged hyperoxia, obliterated vessels remained closed as long as the animal was kept in oxygen, and when high concentrations of oxygen were maintained no vasoproliferation occurred. No difference in the degree of vasoproliferation was demonstrated on transferring animals to hypoxia rather than to air. Carbon dioxide in concentrations up to 5% had no effect on either the vaso-obliterative or vasoproliferative phases. Tolazoline (Priscoline) hydrochloride, in a single experiment, did not appear to modify the vaso-obliterative effect of oxygen. Ethyl biscoumacetate (Tromexan) profoundly modified the degree of vaso-obliteration seen after oxygen exposure; this is probably due to the prevention of intravascular coagulation so that affected vessels are able to reopen in air. Although a return to hyperoxia to some extent, controlled the vasoproliferation stimulated by oxygen vaso-obliteration, the inevitable return to air was accompanied by an exacerbation of the process. Relating the experimental results to retrolental fibroplasia, it is concluded that the findings parallel the early stages of the human disease. The difference in the subsequent course is dependent upon the development of retinal detachment, which did not occur in the kitten experiments. Despite this difference the two diseases appear identical in origin. Prophylaxis seems the most hopeful line of attack, and an urgent plea is made for the control of oxygen therapy in the treatment of the premature baby.

Direct Observation of the Effect of Oxygen on Developing Vessels: Preliminary Report. N. Ashton and C. Cook. Brit. J. Ophth. 38:433-440 (July) 1954 [London, England].

In order to study the process of vaso-obliteration and to correlate the findings in injected retinas with events in life, Ashton and Cook utilized a new limbal window technique, devised by Cook, that permits direct observation of the living retinal vessels. To determine whether oxygen has a similar action on growing vessels in the adult animal they investigated the effect of hyperoxia on vascularization of the rabbit cornea and rabbit ear chamber; indirect evidence for its action on vessels in the embryo was sought in a few experiments on hens' eggs. The methods employed, together with the results obtained, are described. It was found that hyperoxia has no effect on growing vessels in the rabbit cornea or in the rabbit ear chamber. Oxygen has no observable effect on the retinal vessels of the adult cat. In the kitten immediate and delayed reactions are seen. The former consists of vasoconstriction and capillary obliteration developing after five minute exposure to oxygen. This does not progress to total obliteration and the vessels reopen after about 10 minutes and remain in this state for about five and one-half hours when the delayed effect comes into operation. The vessels then again constrict and total vaso-obliteration gradually develops, becoming complete in about eight hours. Once this is achieved the circulation may be opened or closed in about five minutes by alternating air and oxygen. Vaso-obliteration cannot be induced in the detached retina, and obliterated vessels reopen when detachment develops. Chick embryos may survive 80 or 90% oxygen during the last seven days of incubation, hatch out alive, and develop normally in air.

OTOLARYNGOLOGY

Can Perceptive Deafness Result from the Use of Antibiotics Other Than Streptomycin? H. Björk and J. Ranta. Acta otolaryng. 44:254-258 (May-June) 1954 (In English) [Stockholm, Sweden].

A woman, aged 48, had received 1 gm. of dihydrostreptomycin daily for 10 successive days for purulent dermatitis, and three and one-half months later she was given 250 mg. of oxytetracycline (Terramycin) four times daily, a total dose of 8 gm. in the treatment of acute bronchitis. The first treatment was well tolerated. During oxytetracycline therapy a rapidly increasing tinnitus of roaring type appeared in addition to other side-effects and her hearing continued to deteriorate for many months. On the basis of over one year's observation it may be concluded that the patient will have a permanent severe hearing loss. Although the part played by dihydrostreptomycin therapy, especially a possible sensitizing effect, cannot be excluded with certainty, it seems obvious that the oxytetracycline was the precipitating cause of the deafness. It thus appears possible that antibiotics other than those of the streptomycin group can cause perceptive deafness; therefore, it is advisable to discontinue these drugs if the patient complains of increasing tinnitus during treatment.

Otosclerosis and Review of 51 Fenestration Operations. K. Hunter. Ulster M. J. 23:23-26 (May) 1954 [Belfast, Ireland].

Otosclerosis is characterized by spongification of the bone of part of the otic capsule, which is softer than normal bone and contains an excessive number of marrow spaces and thin-walled blood vessels. The lesion is usually bilateral, circumscribed, and occurs in the region between the cochlea and vestibule, just anterior to the foot plate of the stapes. The lesion may involve the basal turn of the cochlea and round window. Other areas are occasionally involved. Ankylosis of the foot plate of the stapes produces the characteristic clinical features. Heredity plays an important part, but while some observers have found a family history in 50% of the cases, of the 51 cases reviewed here only 18% had such a history. It is more common in women than in men, women accounting for 70% of the cases in this series. It was first noticed between the ages of 9 and 39 years. Pregnancy and severe illness may cause deterioration. Tinnitus is common, and sometimes it is the presenting symptom. Giddiness occasionally occurs. Paracusis willisiana is a characteristic finding, i. e., the patient can hear better in the presence of a noise. In this series of 51 cases, only 6 had no paracusis. The diagnosis is suggested when a young woman with normal tympanic membranes complains of increasing deafness, tinnitus, and paracusis. Many types of conservative treatment have been advocated, but none have proved of benefit. Hearing aids are of great value in the same type of case considered ideal for operation. After briefly reviewing the surgical methods that were tried before Lempert's fenestration operation, the author describes the technique of this last method and his own experience with it. The fenestra is made in the lateral semicircular canal opposite the stapes by means of dental burrs. The ear with the worst hearing is operated on first, so that, in the event of it being unsuccessful, a hearing aid may still be worn in the ear not operated on. The selection of cases suitable for operation is difficult; the key is the state of the inner ear. There is no point in providing a passage for sound waves into the inner ear if it is not capable of transmitting the impulses to the brain. There is, as yet, no absolutely reliable test of inner ear function. Bone conduction is probably the best test. An improvement of 30 db. can be expected in a suitable case. A higher gain is sometimes obtained but should not be anticipated. An interval of 18 months must elapse before assessing results. The hearing gained may be lost again because of bony closure of the fenestra. This usually occurs during the first year after operation, and is unlikely after 18 months. This length of time has elapsed in only 31 of the author's 51 cases. Good to moderate improvement was obtained in about two-thirds of these cases; slight, or no improvement, or worsening was noted in the other third. Since deafness is progressive in otosclerosis, even the achievement of a stationary level of hearing represents some gain.

THERAPEUTICS

Comparative Results of the Use of ACTH, Cortisone, and Hydrocortisone in the Treatment of Intractable Bronchial Asthma and Pulmonary Emphysema. H. A. Bickerman and A. L. Barach. J. Allergy **25:**312-324 (July) 1954 [St. Louis].

One hundred sixty-three patients, 107 with intractable asthma and 56 with pulmonary emphysema, were given 309 courses of corticotropin (ACTH), cortisone, or hydrocortisone. Complete or partial remission was observed in 82.3% of the corticotropin courses, and in 86.2% of the cortisone courses. Complete or partial relief of bronchospasm and dyspnea occurred in 96% of the courses of hydrocortisone administered at a dosage level averaging 50 to 60% of that employed with cortisone. The duration of remission induced by the short, intensive courses of corticotropin, cortisone, or hydrocortisone was generally short, averaging about two to three weeks. No significant difference in the duration of remission induced by these hormonal agents was found. Patients with bronchial asthma generally manifested a more complete remission than those with the bronchospastic type of pulmonary emphysema. The effects produced with hydrocortisone differed from those of cortisone in the following manner: a swifter onset of therapeutic benefit, i. e., in 18 to 36 hours with hydrocortisone as compared with four to five days with cortisone; a decreased dosage requirement of about one-half to two-thirds of the cortisone dosage for comparable effect; and a significant reduction in the adverse side-reactions, probably due to the smaller dosage used. The best results from the use of hormonal therapy took place in the following two clinical entities: (1) patients in whom persistent bronchospasm was the result of exposure to seasonal factors, such as pollen; and (2) patients in whom the asthmatic state had been previously moderately well controlled but in whom intractable bronchospasm developed after an upper respiratory infection. Although short, intensive courses of corticotropin or the steroids seemed preferable to maintenance therapy in these two groups, in 21 of the 30 patients with chronic intractable asthma, pulmonary fibrosis, and advanced pulmonary emphysema, clinical improvement was maintained for from 9 to 24 months by a daily dose of 20 to 75 mg. of cortisone or hydrocortisone. The adverse side-effects of administration of the corticoids and corticotropin were generally lessened by a low sodium diet, administration of potassium chloride, and the use of antibiotic drugs in the presence of bronchial and sinus infections. The effectiveness of hydrocortisone at approximately one-half the dosage level of cortisone was accompanied by a significant reduction in the incidence of adverse side-reactions. In one patient who took cortisone against advice for three months bilateral pulmonary tuberculosis developed. One death occurred; it was in a patient with severe bronchial asthma after repeated courses of both corticotropin and cortisone. Delirium accompanied by exhaustion, fever, and cardiorespiratory failure suggested an Addisonian-like crisis.

Use of Rauwolfia Serpentina in Treatment of Arterial Hypertension. A. Martelli. Gaz. med. ital. **113:**127-136 (May) 1954 (In Italian) [Milan, Italy].

The pharmacological effect of Rauwolfia serpentina was studied in seven patients with essential hypertension and in three with renal hypertension. The first group—four men and three women between the ages of 46 and 60 years—received the drug orally in the standard dosage of three tablets per day, every eight hours, for 15 days. The hypotensive effect ranged from a minimum of 20 to a maximum of 40 mm. Hg for the systolic pressure and from a minimum of 10 to a maximum of 15 mm. Hg for the diastolic pressure. The mean pressure decreased accordingly, and the oscillometric values increased slightly. Fifteen days after the discontinuance of the treatment, differences between the initial values ranged from a minimum of 15 to a maximum of 40 mm. Hg for the systolic pressure and from a minimum of 5 to a maximum of 15 mm. Hg for the diastolic. Two weeks later the difference was of 25 mm. Hg for the systolic and 5 mm. Hg for the diastolic in one of the patients. Bradycardia was observed in five of the patients. The fact that the greatest hypotensive effect of the drug was recorded in the two patients in whom bradycardia was not seen suggests that the two phenomena are independent of each other. The subjective symptoms of headache, vertigo, buzzing, excitability, and insomnia became attenuated or disappeared. The three patients with renal hypertension—two men and one woman between the ages of 46 and 53 years—received 4 mg. of the drug orally twice daily for 15 days. The hypotensive effect was evident in all; it was greatest in one patient who remained in bed during the entire two weeks of treatment. In this patient there was drop in the systolic pressure of 50 mm. Hg and the diastol pressure of 40 mm. Hg. Two weeks after the discontinuanc of the treatment, the hypotensive effect was still present in th two patients who were followed up. The subjective sympton were markedly affected in this group also. All the 10 patien tolerated the therapy well; none had gastroenteric side-effect 3 had mild nasal congestion. The hypotensive effect of the dru appears slowly, and thus it is not indicated for paroxysmal hy pertension or for hypertensive attacks in chronic hypertension

Clinical Trials of O-Diazoacetyl-L-Serine (Azaserine) in Neo plastic Disease. R. R. Ellison, D. A. Karnofsky, S. S. Sternberg and others. Cancer **7:**801-814 (July) 1954 [Philadelphia].

A serine analogue, O-diazoacetyl-L-serine (Azaserine), that inhibits tumor growth in mice was given to 41 adults and 15 children with several types of neoplastic disease. There were 93 separate trials, the drug being given until definite signs of toxicity appeared. The usual daily dose was 8 to 10 mg. per kilogram of body weight intravenously or orally; the drug is about 60 to 70% more active by the intravenous route. After 5 to 20 days signs of toxicity appear, and it is usually advisable to discontinue the drug. The total dosage for each course of treatment thus lay between 50 and 200 mg. per kilogram in most cases. The toxic effects of Azaserine principally involve the digestive tract, with redness of the tongue and buccal mucosa, which sometimes becomes ulcerated, and nausea and vomiting. These effects clear promptly when the drug is stopped. Leukopenia, to a mild degree, occurred in about one-third of the patients. The most serious and unpredictable effects were systemic intoxication with anorexia, weakness, apathy, serum electrolyte disturbances, and an unusually high incidence of jaundice. These effects occurred to a serious degree in 9 of 41 adults; these patients were all in poor condition, and in no instance could the complications with certainty be attributed to Azaserine. They appeared to develop principally in old and debilitated patients and those with liver damage. They were not observed in children. The therapeutic results of Azaserine were limited to a decrease of fever during the period of treatment in 7 of 19 patients with Hodgkin's disease, brief periods of objective improvement in 5 other patients with this disease (achieved two or more times in 3 patients), a decrease in the leukocyte count in two cases of lymphatic leukemia, and brief partial hematological remissions in 3 of 14 children with acute leukemia. While no definite therapeutic application for Azaserine has been found, it has profound effects on a variety of biological systems and is worthy of further clinical study.

BOOK REVIEWS

First Aid and Resuscitation: Emergency Procedures for Rescue Squads, Firemen, Policemen, Ambulance Crews, Interns and Industrial Nurses. By Lt. Carl B. Young, Jr., M.P.H. Cloth. $8.50. Pp. 338, with 169 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1954.

This remarkable book deals with the subject of emergencies as seen by nonmedical personnel who reach the injured before a physician arrives and who must act promptly and decisively. The author has not merely taught the subject but has had an immense experience with emergencies in war and peace. The chapter entitled "Why I Wrote This Manual on Life Saving" is especially revealing as to the barbaric injustice to injured persons that can result from callousness and ignorance. Partly because the outlook is essentially practical, partly because the subject is so charged with emotion, the chapters do not have an obviously logical arrangement; they deal with such matters as shock; unconsciousness; apnea; the equipment of an emergency ambulance; procedures at the scene of collisions, fires, suicides, etc.; methods of resuscitation; the use of oxygen; transportation of the injured; and the dangers of a broken neck. The results of mishandling are stated in language so forthright and simple that it may upset many readers. This is especially true of the photographs. In its realism the book represents a welcome reaction from the misleading first-aid literature of the past, with its sketches of wan patients gracefully submitting to the application of triangular bandages to the head. The photographs in this book, however gruesome, are documentary and should help to prepare emergency workers for some of the shocks they will receive. It is to be hoped that future editions will enable the author to correct a number of minor errors. In spite of these, the book is extremely valuable and deserves the attention of every physician and medical student.

Why We Became Doctors. Edited by Noah D. Fabricant, M.D. Cloth. .75. Pp. 182. Grune & Stratton, Inc., 381 Fourth Ave., New York 16. 54.

It is curious that the decision to study medicine is influenced y personal experiences, an element of chance, or frequently he process of elimination. Some defy immediate analysis; and et most motivations appear logical, though an apparently ational one in one instance may not make good sense in nother. Idealism is reflected in the career of Elizabeth Blackvell, the first woman recipient of the doctor of medicine legree, and likewise in that of other women. Lewis Tryon ollowed in the footsteps of medical forebears. Hans Zinsser elected medicine because of a fondness for science instilled y his teachers. Carlos Williams and A. J. Cronin were bent y the desire of literary men to eat fairly regularly. Albert Schweitzer, a theologian of stature and musical exponent of Bach, studied medicine in order to become a medical missionary. In this book, 50 articulate men and women tell their own stories in their own words. The reader might be acquainted with some of them. Many readers may want to suggest this volume to their friends, children, and colleagues. It is a thoroughly enjoyable and enlightening book.

The Emotional Problems of Children: A Guide for Parents. By Harry Joseph, M.D., and Gordon Zern. Cloth. $3.75. Pp. 310. Crown Publishers, Inc., 419 Fourth Ave., New York 16, 1954.

This volume provides guidance for parents who are confused or disturbed by activities of their children that may be interpreted as abnormal. The first section of the book devotes four chapters to normal evolution. These cover the first year of life, the child from 1 to 6, from 6 to 12, and adolescence. There is helpful clarification of reactions and attitudes that may be expected during these various periods. In the second section, what may be considered "run-of-the-mill" problems are discussed, with chapters on toilet training, masturbation, jealousy, discipline, and related topics. In addition, there are discussions of adoption, problems associated with illness, nursery schools, maternal overprotection, and feeding problems. Helpful orientation is provided in the third and last section of the volume, to which specialists in child work have contributed. Under the general consideration of emotional health background, development of personality is described, and information is given on when a child may need help. Psychological examinations are described in a chapter by Samuel Goldworth, and there is an evaluation of schools by Goodwin Watson. Other special chapters include one on the dance by Elizabeth R. Rosen; one on music by Evelyn Phillips Heimlich; one on dramatics by Eleanor L. Mamorsky, and one on camping by the Teffertellers. In an appendix there is detailed discussion of motion pictures as teaching aids. An extended list of suggested films is provided under various age groups, with a directory of distributors. There is also an extensive and well-arranged bibliography. This volume should be helpful to the average parent. The information provided is sound and sensible.

The Doctor Writes: An Anthology of the Unusual in Current Medical Literature. Edited by S. O. Waife, M.D., F.A.C.P. Cloth. $3.75. Pp. 175. Grune & Stratton, Inc. 381 Fourth Ave., New York 16, 1954.

The editor of this anthology used three criteria for selecting the contents: interest of subject, excellence of writing, and pleasure in reading. That he has been successful can be judged from the fact that there unquestionably is something of interest and appeal—either in the nature of the subject matter or in the distinctive style of the contributing authors—to most medical readers who wish to make excursions into fields divorced from routine medical reading. An inkling of the range of this book can be gained by a perusal of several of the chapter titles: Sherlock Holmes as a Dermatologist; Showmanship in Medical Teaching; Therapeutic Art; Medical Stamps; Superior Clinical Acumen of the Old Physicians: A Myth; Medicine and the Bible; and Caritas Medici. This anthology should provide intellectual pleasure and satisfaction for its readers.

Digital Plethysmography: Introducing a Method for Recording Simultaneously the Time Course of the Rate of Blood Flow into and out of the Finger Tip. By George E. Burch, M.D., F.A.C.P., Henderson Professor of Medicine, Tulane University School of Medicine, New Orleans. Modern medical monographs 11. Cloth. $5. Pp. 134, with 83 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1954.

The primary purpose of this monograph is to present the technical details associated with a method of recording the rate of blood flow into and out of the digits of man. The author describes the various theoretic considerations involved in obtaining accurate readings, using the venous occlusion plethysmographic method. Attention is also called to the dangers of error encountered and to the means used to minimize or evade them. Through an analysis of the curves obtained from the finger with a double-beam plethysmograph, the author is able to measure the time course of the rate of blood into and out of the finger tip. He believes that the method should be applicable to the understanding of peripheral circulation in normal and abnormal vascular states; however, it is necessary to point out that the finger, containing large numbers of arteriovenous shunts, represents a specialized type of vascular bed and, hence, does not reflect circulatory responses elsewhere in the extremities. This fact detracts from a wide experimental or clinical application of the method. The author's plan of presentation is simple and effective. The numerous figures are generally not complex, the contents of individual sections are clearly indicated by headings in large type, and the style is pleasing to the reader. No attempt has been made to present a comprehensive bibliography.

These book reviews have been prepared by competent authorities but do not represent the opinions of any official bodies unless specifically so stated.

Management and Union Health and Medical Programs. By Margaret C. Klem and Margaret F. McKiever. United States Department of Health, Education, and Welfare, Public Health Service, Division of Occupational Health. Public Health Service publication no. 329. Paper. $1. Pp. 276, with 4 illustrations. Supt. of Doc., Government Printing Office, Washington 25, D. C., 1953.

The employed population, according to this report, is distinctly and positively concerned about health and medical care. Every major union in recent years has included some reference to health and welfare in its employment negotiations. If this is so, then no other group has more influence on the ultimate nature and place of health services in our industrial society. In this compilation of factual descriptions of existing types of programs, no effort has been made at critical evaluation. Examples are provided to show the wide range of actual operation—from office type of diagnostic service to full coverage including hospital, home, office, and dental care. It would appear that the patterns are set. It is still not proved that this segmentalization of medical services is necessarily better, more efficient, or more reasonable. Further intensive and critical study is necessary. In this book the descriptions of specific plans are preceded by historical and developmental data, beginning with the early mutual societies and leading to the modern area of widespread insurance coverage. Ample evidence is given of growth and expanding scope, both in text and table. One useful section deals with the language of health and welfare clauses, specific provisions, financial methods, and administrative relations under the Taft-Hartley legislation. Leaders in medical organization should study these and similar revelations of what may be the shape of things to come.

Modern Trends in Dermatology (Second Series). Edited by R. M. B. MacKenna, M.A., M.D., F.R.C.P. Physician in Charge Dermatological Department, St. Bartholomew's Hospital and Medical College, London. Cloth. $12. Pp. 338, with 58 illustrations. Paul B. Hoeber, Inc. (medical book department of Harper & Brothers), 49 E. 33rd St., New York 16, 1954.

The purpose of this series is to keep medical readers abreast on latest developments in specific fields. As in the first volume, the editor has done a fine job in selecting both topics and authors. A few short chapters written by those who contributed most to the subject matter are indeed classics, such as the chapters on cutaneous sensibility by Weddell, on the blood factor in lupus erythematosus by Haserick, and on cytodiagnosis in dermatology by Tzanck and Melki. Other chapters have more the character of detailed review articles and are written by actively practicing clinical scientists. In his chapter on cutaneous tuberculosis, Dowling, who was responsible for the development and study of the mechanism of calciferol therapy in lupus vulgaris, discusses the mechanism and significance of attenuation of the tubercle bacillus and possible relationship between different clinical manifestations and tissue immunity. He also presents a concise picture of our present therapeutic armamentarium with interpretation of action mechanisms. Danbolt, in whose laboratory the Kveim reaction was developed, discusses sarcoidosis. He doubts with good reasons that recent experimentation with BCG in this disease has supported the assumption of its tuberculous origin, although he finds the total evidence in favor of some kind of infectious cause. He regards histological examination, tuberculin testing, and the Kveim reaction as the most important aids in confirming the clinical diagnosis of sarcoidosis.

Cochrane's chapter reflects the tremendous progress in the knowledge of epidemiology, diagnosis, and therapy of leprosy. He covers all aspects of the lepromin test as it relates to clinical manifestations and prognosis. For treatment he finds sulfones far superior to streptomycin and isoniazid. The chapter on the bacteriology of normal and diseased skin by Pillsbury and Kligman is distinguished by clarity, precision, and originality. It contains much hitherto unpublished data. The authors discuss in detail when and where bacteriological findings in skin lesions can be regarded as significant and devote special sections to the antiseptic capacity of normal skin and to the role of bacterial allergy in skin diseases. Macalpine deals with psychosomatic aspects in dermatology in a chapter that is fascinating whether one agrees with her interpretations or not. The chapter by Riddell on the pathogenesis of tinea capitis deals mainly with the recent work of Kligman and reflects the not generally accepted view of the Philadelphia school that a great number of infections with Microsporon audouini heal spontaneously before puberty and that fungistatic agents help only by inciting inflammatory reactions. Harley deals with allergy and lists under the term "hereditary allergy group" what is called atopy in the United States. Some dermatologists will not accept this group as having a clear-cut allergic pathogenesis, nor will they share the author's optimism concerning desensitization in allergic contact dermatitis. Baer presents a learned and complete study on cross sensitization phenomena. A chapter on helminths and the skin by Gordon and Griffiths, which deals mainly with the varying nature of the host-parasite relationship, is excellent.

The difficult task of dealing in a single chapter, under the heading Physiology and Functional Pathology of the Skin, with recent developments in reaction to skin injury, collagen, elastic tissue, sweat glands, sebaceous glands, and antibody production in the skin is well done by Cameron and Spector, even if some statements such as that collagen is a "fibrillar glucoprotein" or that the physical properties of collagen "may vary from tissue to tissue" may be challenged. The final chapters on therapy are up-to-date, well written, and useful also for the general practitioner. They cover recent developments in the use of antibiotics by Shooter, cortisone and corticotropin by Sulzberger, and beta-ray therapy by Williams. Last but not least, there is an interesting chapter on ecology in relation to dermatology by Banks. He evaluates the effect of social changes, contrasts decline of infections and infestations with the increased incidence of dermatitis due to physical and chemical causes, and stresses the growing problems of an aging population. On the whole the book reflects the amazing progress of dermatological knowledge in the last 10 years. The typography and illustrations are first class.

Clinical Orthopaedics. Number Three. Anthony F. DePalma, editor-in-chief. With assistance of associate editors and board of advisory editors. Cloth. Single numbers, $7.50; sustaining members, $5. Pp. 230, with illustrations. J. B. Lippincott Company, 227-231 S. Sixth St., Philadelphia 5; Aldine House, 10-13 Bedford St., London, W.C.2, England; 2083 Guy St., Montreal, Canada, 1954.

This third volume of a series of authentic papers on orthopedic subjects upholds the high standards of its predecessors. The editors have been skillful in their choice of subject matter, grouping of clinical entities, and selection of contributors. The text is clear and especially well illustrated. Each chapter is concise and to the point. Many end with brief summaries and extensive references. Part 1 deals with soft tissue conditions around joints. Chapters on sprains, ligamentous lesions, injuries of the menisci, dislocations of the patella, and diseases of the hip and shoulder contain accurate and practical information. Part 2 includes a discussion of giant cell tumors of bone. The sections dealing with x-rays and pathological lesions are especially good. The author, a pathologist, mentions treatment only briefly. Part 3 includes several interesting operative techniques applicable to long bone and joint lesions. Any surgeon having to do with orthopedic conditions should profit greatly from a perusal of this book.

Introduction to Vertebrate Embryology. By Waldo Shumway, Dean, Stevens Institute, Hoboken, N. J., and F. B. Adamstone, Professor of Zoology, University of Illinois, Urbana. Fifth edition. Cloth. $6. Pp. 389, with 256 illustrations. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16; Chapman & Hall, Ltd., 37-39 Essex St., Strand, London, England, W.C.2, 1954.

This text, which first appeared in 1927, presents the fundamentals of embryology in a clear and concise manner. The subject matter is treated on a comparative basis, with the amphioxus, the frog, the chicken, and man serving as the prototypes. There is a short section devoted to embryologic techniques and an extensive glossary of technical terms employed in embryology. The numerous illustrations are clearly drawn and labeled. The material presented in this book should adequately orient the medical student in the field of embryology without overwhelming him with details of interest and importance largely to specialists in the field.

QUERIES AND MINOR NOTES

SITE OF SMALLPOX VACCINATION

To the Editor:—*I have seen smallpox vaccination sites located on the back, between the scapulas, just to the right of the midline. What is the rationale of using this site?*

Glenn T. Howard, M.D., Alice, Texas.

Answer.—Various areas of the body have been chosen for performing a smallpox vaccination. Usually deviation from the customary site on the arm has concerned the female sex. The objection to the arm is based on the fear that there might be an ugly scar. In that case it would detract from the girl's beauty when she appears in evening dress. Some health officers will not permit members of their departments to vaccinate on the leg because there seems to be an increased likelihood of secondary infections. Possibly for that reason the back of the shoulder has been selected sometimes. A vaccination in the midline would not be advisable on account of the proximity to spinal processes; however, it should make no difference whether the site is to the right or left of the midline. In the case cited perhaps it was anticipated that the shoulders might be exposed.

INFLUENZA

To the Editor:—*Is it possible to have five or six attacks of subclinical infection with respiratory influenza over a period of two to three months? The symptoms were generalized muscular ache, malaise, fatigue, slight elevation of temperature. The latest episode of these symptoms resulted in the patient's having acute fulminating influenza (temperature 106 F). Penicillin, 600,000 units, proved effective. I wonder if the previous five or six series of complaints might have been the picture of subclinical influenza? Is a partial immunity acquired after each subclinical or clinical attack of influenza?*

M.D., Michigan.

This inquiry was referred to two consultants, whose respective replies follow.—Ed.

Answer.—It is highly improbable that repeated attacks of respiratory infection due to the influenza viruses would occur in the same person during a period of two to three months. While sporadic infections due to the influenza viruses may occur, they are relatively infrequent; most cases of influenza occur during outbreaks or epidemics. Influenza viruses are now classified in three immunologic groups termed influenza A, B, and C. There is no known cross immunity among these three groups, and even within one group there is considerable immunologic variation. Theoretically it should be possible to have repeated attacks of influenza at short intervals in one person due to immunologically different strains of virus. In actuality, however, this is a rare event, since it is very uncommon to have more than one type of influenza virus prevalent in a single population at a given time. Homologous immunity occurs after infection with any one of the various strains of influenza virus and lasts for several months to a year, if not longer.

Answer.—Influenza is a viral disease that is not responsive to antibiotics. Occasionally, secondary bacteriological invaders assume an important role and may be affected by penicillin. The high fever and apparent response to penicillin and recurrent attacks in this case raise serious doubts that influenza is responsible for the patient's condition. No note is made of cough or other respiratory symptoms or indeed any localizing complaints. Hence, from the report as stated, one is dealing with febrile responses of unknown origin. A careful survey of this patient should be undertaken, including investigation of the lungs, genitourinary tract, and gallbladder. Generalized infections, such as infectious mononucleosis, brucellosis, trichinosis, rheumatic fever, and tuberculosis, also should be considered.

MERALGIA PARESTHETICA

To the Editor:—*For one year, a patient has had severe pain, mostly in the anterolateral side of his right thigh, and less severe pain in his left thigh. It begins two or three minutes after walking, and it disappears entirely after the patient sits or lies down. His case was diagnosed as neuromyositic pain, arteritis, and fibrositis. He has been treated by deep x-ray and short-wave therapy and with various drugs without any effect whatever. What is the cause of this pain, and what treatment is recommended?*

M.D., Cairo, Egypt.

Answer.—A diagnosis of meralgia paresthetica appears applicable for this condition. This ailment results from damage to lateral femoral cutaneous nerves and manifests itself primarily by paresthesias and pain in areas served by this nerve. Generally, "pins and needles" sensations are experienced, also burning, coldness, pain, and tingling or pricking sensations. Examinations may disclose no alterations of sensibility or perhaps slight loss of either thermal sensitiveness or sensitivity to pain. Occasionally, there is a degree of hyperesthesia. Areas affected by these alterations are generally poorly delimited. Standing or walking almost always aggravates this condition, and relief is frequently obtained by resting or lying down. The cause of meralgia paresthetica is obscure. Trauma from pressure of belts or corsets has been suspected, also toxic and infective causes, such as syphilis, rheumatism, diabetes, and gout. In most instances affected persons are obese; some have flat feet, and many show marked hypertrophic changes in roentgenograms of lumbar vertebrae. Men are said to be affected more often than women, and, in a majority of the cases, the patients range in age from 30 to 60 years. Involvement may either be unilateral or bilateral. In many instances, termination is favorable and the patient is entirely free of symptoms; others failing to respond to any therapy have trouble for years. Treatment measures of possible value include relief of obesity, removal of tight corsets and belts, avoidance of excessive standing and weight-bearing, and attention to postural defects involving the lower extremities and spine. Surgical freeing or slitting of the fascial sheath of the lateral femoral cutaneous nerve has been recommended and injection of alcohol into the nerve has been said to help in some cases.

PRESCRIPTION OF ELIXIRS TO ALCOHOLICS

To the Editor:—*An alcoholic, 50 years of age, who has been able to abstain from alcohol for seven years was given an elixir containing 15% alcohol for a cough. This was prescribed in a dose of one drachm (3.7 ml.) three times a day. In view of the minimal dose (8 minims [0.49 ml.] of alcohol per teaspoonful), do you consider this medication contraindicated?*

M.D., Ohio.

Answer.—The amount of alcohol contained in this elixir is small. If given according to the above prescription and for one to two weeks only, a renewal of alcohol desire or craving should not be expected in a former alcoholic patient. On the other hand, the danger exists that, with repeated renewal of the prescription or over an irregular or indefinite period of time, desire for alcohol may develop. One must also keep in mind that little is known about individual susceptibility. In some persons, a small percentage of alcohol in a beverage may produce toxic effect. This susceptibility seems to depend on a constellation of physical and psychological factors about which there is insufficient knowledge. It would seem, therefore, a safer principle not to prescribe medication in the form of an elixir to this patient.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

ACNE VULGARIS

To the Editor:—*What is your opinion on the use of Kutapressin in the treatment of acne vulgaris? What do you consider a satisfactory treatment for acne vulgaris and its residuals?* *Hubert T. Goodman, M.D., Terre Haute, Ind.*

Answer.—Kutapressin is a cutaneous vasoconstrictor obtained from liver. Although it has been recommended in treatment of acne vulgaris, its use cannot be rationalized by this consultant; therefore, he does not recommend it. Many agents have been recommended in treatment of acne vulgaris. The most generally used are: local applications of zinc sulfate-potassa sulfurata mixture, such as lotio alba, NF; x-ray; ultraviolet light; staphylococcic ambotoxoid; opening pustules and evacuating comedones; improvement of the general health of the patient with reference to balancing the diet; curtailment of carbohydrates, particularly chocolate; correction of anemia if found; and removal of foci of infection, such as infected tonsils and teeth, especially in older patients. More recently the following medicaments have been recommended: estrogens, vitamin A, thyroid extract, and broad spectrum antibiotics. Reference to residuals in the inquiry doubtless refers to scars and pits. These can be treated by applications of carbon-dioxide slush or painting with 20% trichloroacetic acid, which gives fairly good results. More recently planing with sandpaper or by means of mechanically driven rotary wire brushes has been effective.

ERUCTATIONS OF FOUL-SMELLING GAS

To the Editor:—*A 25-year-old woman for two and a half years has had recurrent episodes of bloating, foul-smelling eructation, feeling of fulness, and lassitude. These symptoms are followed in 8 to 12 hours by cramps in the lower abdominal region and watery stools. Her most unpleasant symptom is the eructation of a foul-smelling gas that has the distinct odor of hydrogen sulfide. Its presence is transient and immediately follows eructation. Complete physical as well as upper and lower gastrointestinal and gallbladder series and sigmoidoscopy were not remarkable. The routine complete blood count, urinalysis, and chest film were normal. The patient has had no weight loss or melena and, except for these attacks, has good health. I do not feel that this patient has an intestinal fistula or reverse peristalsis sufficient to bring lower intestinal contents into the stomach. Is there any source for formation of this foul-smelling gas in the upper intestine or stomach?* *M.D., California.*

Answer.—The nature of the intestinal gases is largely dependent on the types of food eaten, the activity of the digestive processes, and the nature of the bacterial flora present. Such odors as are described in this case are possible in a hypermotile digestive tract. However, the presence of a gastrointestinal fistula should be excluded. The fact that there is diarrhea in association with these gaseous eructations suggests the presence of some intestinal disorder.

FLUOROSCOPY OF INFANTS

To the Editor:—*Is there any possible harmful effect, immediate or long range, from fluoroscopy of a normal infant at monthly intervals during the first year of life?*
Herman Altman, M.D., Long Island City, N. Y.

Answer.—In the particular form in which the question is asked, the answer must be yes. If the fluoroscopist were inexperienced and if he worked without bothering to accommodate his eyes to the dark, employed relatively long exposure times and high intensity, used a radiation beam that was not sharply coned and well filtered, and failed to protect the gonads from exposure, there would be real risk of long-range or even immediate harmful effect. At the hands of a professional radiologist trained to avoid the unnecessary hazards listed above, the risk would be so slight that it probably would be less than that incurred in bringing the infant to the clinic by private or public transportation. However, even if the work is well done by a competent person, the rule should always be that the proper dose of radiation is the smallest amount that is consistent with the clinical needs of the patient. Since in this case the patient is said to be normal, one should not undertake the periodic fluoroscopy without carefully considering whether the advantage that might be gained would offset the extremely small but ever-present genetic risk that is involved.

ELECTROCARDIOGRAM OF FETUS

To the Editor:—*What are the possible values of electrocardiographic tracings of the fetus in the pregnant woman? When in pregnancy, would be the most propitious or optimal time to make such tracings? Is there any better way to obtain similar or allied information than by the use of the electrocardiogram?* *M.D., New York.*

Answer.—Electrocardiographic tracings of the fetus in utero have had little clinical application. Tracings can be obtained during the last trimester of pregnancy. In the presence of an abnormal fetal heart rate and rhythm, suitable tracings may occasionally show evidences of gross cardiac abnormalities. Most of the work in this field has been experimental with the hope that the knowledge obtained will have clinical implications (Smyth: *Lancet* 1:1124 [June 6] 1953).

INJECTION OF HYALURONIDASE INTO GANGLIONS

To the Editor:—*In* The Journal, *July 10, 1954, page 1022, there is a suggestion that a ganglion be treated by aspiration, washing with procaine and saline solutions, and then injection of hyaluronidase or hydrocortisone. I tried hydrocortisone on one patient some time ago. The treatment, which was repeated twice at intervals of one week, was unsuccessful, so the ganglion was removed surgically. The stitches were taken out on the eighth day and the wound fell open. The edges were indolent, but there was no sign of infection. The patient was a perfectly healthy 15-year-old girl. For two weeks an attempt was made with adhesive strips to get the wound to heal, and this failed. After another week it finally started to granulate and healed by granulation. I have heard of two similar cases in this area. I report this as a possible warning against operating on cysts that have been treated by hydrocortisone injection. There have been other reports of slow healing associated with the use of these hormones. It is my opinion that surgical intervention should be postponed for at least a month if hydrocortisone injection treatment of cysts or bursas has been unsuccessful.*

Bernard P. Harpole, M.D.
1920 N. W. Johnson St., Portland 9, Ore.

CANCER IN RETAINED CERVICES

To the Editor:—*I cannot wholly agree with the letter from Dr. Malcolm Raymond on cancer in the retained cervices, in the June 12, 1954, issue of* The Journal, *page 708, in response to Dr. Brunschwig's letter. The routine practice of performing supravaginal hysterectomy (a confusing term that should be changed to uterine fundectomy) is unfair to the patient and should be condemned. This operation is performed, in most cases, by surgeons who do not have the ability to perform the accepted procedure, total hysterectomy. Any surgeon who claims shortening of the vagina and loss of support of vaginal vault with resulting dyspareunia has not observed the results of total hysterectomy. With the total removal of the cervix, the vagina is lengthened. Dyspareunia is often present when the cervix is retained and is often relieved by removing this stump. There are other disadvantages to incomplete hysterectomy. There is a high incidence (46% in one series) of carcinoma in the bleeding stump. Preoperative symptoms persisted after incomplete hysterectomy in 30% of one series, and these were relieved by removal of the stump. Unsuspected carcinoma of the cervix was found in 4% of another series of uteri completely removed.*

Charles Barranco, M.D.
230 Kirk St., Morgantown, W. Va.

THE JOURNAL

of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 156, NO. 8

CHICAGO, ILLINOIS

OCTOBER 23, 1954

COPYRIGHT, 1954, BY AMERICAN MEDICAL ASSOCIATION

PROGRESS IN PHYSICAL MEDICINE AND REHABILITATION

CHAIRMAN'S ADDRESS

Walter M. Solomon, M.D., Cleveland

The specialty of physical medicine and rehabilitation has made great strides during the past few years. The different types of therapy included in this field are not new; many of them are perhaps the oldest in the field of the healing art; however, in the past years these methods have been employed empirically or unwisely, often without materially helping the patient. More recently, through the efforts of many physiatrists, these measures have been utilized more effectively and extensively. The physiatrist, too, has been responsible for arousing greater interest on the part of the medical profession in the different forms of therapy, whether in the specific agents, in the kinds of therapy included in occupational therapy, or in the use of all the principles now referred to as "medical rehabilitation." Most of the best medical schools have established departments of physical medicine and rehabilitation with physiatrists in charge. This is an important sign of recognition. In these schools, programs are directed toward the better care of patients, toward educating both the undergraduates and the graduates, and toward research and clinical investigations. The number of new departments of physical medicine and rehabilitation that are now found in hospitals is a further measure of progress. Today nearly all hospitals in sizeable communities have physical therapy departments at least, whereas many now have departments where all the facilities of physical medicine and rehabilitation are available. Many communities, too, have large and well-staffed rehabilitation centers where patients are given the most comprehensive care.

Research and clinical investigations during the past 10 years have helped to evaluate many forms of therapy and their methods; for example, the simple heating lamp can now be prescribed with definite precision for greater therapeutic effect, including specific directions as to the wattage, the length of exposure and the area, and the optimum distance between lamp and patient. The physiological changes produced by deep-heating apparatus, such as the short-wave and micro-wave diathermy, are now better known. Recent studies question the therapeutic value of massage, although it has been employed for centuries. Hydrotherapy has been investigated in all of its various aspects. The renewed interest in and a better understanding of different spas will undoubtedly produce a greater and a more rational use of these therapeutic potentials. The physical, chemical, and biological effects of ultrasonic energies are currently being studied to determine the best and safest use of this newest physical agent. Therapeutic exercises have been evaluated clinically and in the laboratories. Valuable information on the rate of bood flow, the energy costs, flow of lymph, changes in muscle structure and strength, and the effect on organs of the body is now available. The diagnosis of muscular disorders and denervation and reinnervation of muscles has been improved by the use of electromyography. This newer diagnostic method has not replaced the well-known and other simple electrodiagnostic testing, but it is complementary to them in determining the diagnosis and prognosis. The list could be expanded to practically all of the physical agents. The services and techniques in the broader field of rehabilitation are being critically evaluated. Much investigative work in all phases of the specialty is still needed, but a review of the accomplishments during these past few years certainly is encouraging.

TREATMENT OF PATIENTS

The development of physical medicine and rehabilitation has extended into the care of many patients, but it is for patients with subacute and chronic diseases and disorders that its results are most outstanding. Special facilities and techniques for this large group of patients are provided. The rheumatic diseases might well head the list of chronic disorders. These include patients with rheumatoid arthritis who, in spite of receiving tremendous assistance from the use of steroids, still require the physical measures and rehabilitation forces. For the much larger group of patients with degenerative joint disease or osteoarthritis, the comprehensive facilities of this specialty offer not only many effective measures to relieve the symptoms but, perhaps more important, also methods that will prevent further progression of the disease.

From the Cleveland Clinic Foundation, and the Frank E. Bunts Educational Institute.

Read before the Section on Physical Medicine and Rehabilitation at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 22, 1954.

Patients with neuromuscular disorders constitute one of the largest groups for which physical medicine and rehabilitation has become preeminent, and first among these are patients with anterior poliomyelitis. Treatment for these patients begins immediately and continues throughout the months of convalescence. Cerebral palsy is another chronic disorder affecting many young patients, for which, fortunately, interest has recently been aroused. Better functioning and happier adjustments for patients have resulted from the extensive programs now available. Physiatrists alone are not responsible for improving the lives of these patients, and incidentally those of their families, but, with other specialists, they do share in the results that have been accomplished. Other large numbers of patients with neurological diseases for which physical medicine and rehabilitation has special considerations are those with Bell's palsy, multiple sclerosis, Guillain-Barré syndrome, and neuropathies from various causes. Not the least important of the neurological conditions is hemiplegia—one of the greatest and most trying disabilities both in old and young. Most of the large number of patients with traumatic conditions that result in partial or total disability can be restored to some form of usefulness by physical agents, and, for those patients with severer handicaps, all the factors supplied by medical rehabilitation can change their outlook from one of little hope to one of new courage and new possibilities.

The largest group afflicted with chronic diseases is composed of elderly patients. Physical and occupational therapy is necessary for many of their disorders, and, by the additional use of all the facets of rehabilitation, these patients can become more contented and assume a more useful role in society. For some unknown reason, inactivity has been thought to be beneficial to elderly patients. This inactivity applies not only to physical but to mental activity as well. Various kinds of therapy can do much to prevent the development of conditions that through inactivity may be more crippling or disabling than the original diseases, and activities may range from passing the hours of the day in practicing a hobby to actual remunerative work. Obviously, many patients cannot and should not be employed. For those who never will be employed, techniques and measures are available that will make their lives and those of their families more comfortable and provide a certain state of physical and social independence; whereas for those less incapacitated, there are types of work that will permit them to use their full capacities.

Because the departments of physical medicine and rehabilitation are chiefly concerned with the care of patients with chronic diseases, occupational therapy has acquired a greater function. In the past, occupational therapy was used almost exclusively in the mental institutions. It now has broadened its scope to supplement the other types of therapy. The occupational therapy section in a general hospital today is likely to have the atmosphere and the equipment of a workshop rather than of a place where only arts and crafts are practiced. The latter techniques are still effective and may be one of the best means of convincing patients that extremities can be put into motion without too much pain. Today, the occupational therapist attempts to develop in the patients self-confidence in their ability to do work. This function may be classed as "psychological therapy"; it is a necessary adjunct in the therapy of many patients and may offer the quickest means of returning these patients to their former occupations.

PHILOSOPHY OF REHABILITATION

With the greater interest in persons who are chronically disabled, whether because of disease or trauma, th philosophy of medical rehabilitation has become a integral part in the total care of these patients. Dr. Fran Krusen[1] wrote: "For many years to come, problems o rehabilitation will remain of great importance in ou national economy. . . . If medicine is to assume its right ful place of leadership in this rapidly developing projec [we must realize] . . . the extreme importance of intelli gent medical guidance in the broader socio-economi problems of rehabilitation. . . . We must begin at once t think about the contributions which our own particula medical specialties can make toward solution of this impending vast national problem." Medical rehabilitatio today has a definite role in the care of the disabled o handicapped. Its goal is to restore the patient to as nea his former life or work as possible within his capabilitie or to another way of life that has as great dignity an value. Medical rehabilitation embraces the efforts o many specially trained persons. The head of a progra of rehabilitation must be a physician. He should be assisted by physicians of the other specialties, and the ancillary services supplied by physical therapists, occupational therapists, speech therapists, social workers, vocational counselors, psychologists, and other professional persons who can contribute to the total care of the patient.

The enthusiasm for the concept of rehabilitation should include recognition of the powers that are in the patient himself. A word, "motivation," has been used repeatedly and embraces many qualities that either must be present or must be developed in the patient. He must have courage, hope, patience, determination, sufficient common intelligence, and a genuine willingness to work. The physicians in the field of rehabilitation are limited in their efforts to rehabilitate the patient by the patient's own desire of accomplishment. If the wish to work again is not present, or the desire to be as independent as possible is not in the make-up of the patient, the most elaborate physical therapeutic measures or the assistance of the most able counselor will be wasted. Patients are human beings. Many do not wish to improve regardless of the opportunities. Examples are known of patients with mild disabilities who, in spite of all efforts do not improve and are content to depend on their friends, families, or communities for care until their days are ended. Methods, as yet unknown, are needed to motivate these patients. Tests or measures are badly needed that would select the patient who would profit most by the total energies provided by physical medicine and rehabilitation. On the other hand, everyone knows of persons with severe handicaps who, in spite of their disabilities, have achieved outstanding success in the professions and in other fields. The degree of chronic handicap is not necessarily correlated with the adjustment of the person

---

[1] Krusen, F. H.: Wartime Physical Rehabilitation, Proc. Staff Meet., Mayo Clin. 18: 334 (Sept. 22) 1943.

SUMMARY

The specialty of physical medicine and rehabilitation has shown important developments. Its recognition by the medical profession, its extension to and greater influence in the medical schools, its expansion of services in hospitals and in rehabilitation centers, and its stimulation of research and investigations in its methods are all factors that represent progress.

2020 E. 93rd St. (6).

REHABILITATION OF THE PATIENT WITH MULTIPLE SCLEROSIS

Morton Marks, M.D.
and
Joseph Goodgold, M.D., New York

Multiple sclerosis is one of modern medicine's mystery diseases. Despite intensive investigation its cause and cure remain unknown. Often readily diagnosed, even by the novice in medicine, it is at times one of the most difficult conditions, even for the neurologist, to diagnose accurately. Since the disease is not a reportable one, the exact number of persons afflicted is unknown; however, it has been estimated that there are 250,000 persons with multiple sclerosis in the United States alone. Many of these represent serious nursing problems. The cost of their medical care and the loss of the patient's earning capacity and that of the member of the family charged with the primary responsibility of caring for the patient add up not only to an annual loss of millions of dollars to our economy but to untold suffering.

The clinical course of the disease has been extensively described.[1] A large number of agents and techniques have been employed in the treatment of multiple sclerosis.[2] They have been directed either toward preventing the development of the lesion in the nervous system, i. e., dealing directly with the pathogenesis of the disease, or toward modifying the dysfunctions that result from the nervous system lesions, i. e., symptomatic treatment. The results of treatment have generally been disappointing "Successful" therapeutic reports must bear careful scrutiny and an awareness of the difficulties in scientifically evaluating the results of any treatment regimen for patients with multiple 'sclerosis. The problems of ascertaining the correct diagnosis, the unpredictability of the natural course of the illness, the occurrence of prolonged periods of remission, the lack of universal agreement as to suitable criteria of improvement or cure, are only some of the factors complicating the problem. Controlled evaluation is difficult, and caution is necessary in judging the effects of any therapy on the course of multiple sclerosis. Counting the number and frequency of remissions and exacerbations of a group before, during, and after treatment and the use of the patient's past performance as a control for the effects of treatment are not unequivocally reliable. Nathanson [3] has described the variability of the disease in two numerically comparable control groups. Muller [1a] has shown that during the first five years the average number, or frequency, of exacerbations exceeds the number to be expected later in the disease. The 4% "deterioration rate" of MacLean and coworkers [4] is only an approximation; moreover, they believe that a five year appraisal is a minimal period in deducing reliable conclusions in the evaluation of any therapy. Unfortunately, no specific laboratory procedure has as yet been developed that can serve as a pathognomonic aid or one correlated with the relative activity of the process. When this is attained it will be possible to scientifically evaluate therapy.

In view of these difficulties many clinicians have unfortunately interpreted the present status of the treatment of the multiple sclerosis patient as one of therapeutic nihilism. Others, however, have accepted the challenge of medically managing these patients, recognizing well their limitations.[5] The patient and his family have placed an increasing pressure on the physician for "treatment." With the general increased awareness of the potential of rehabilitation techniques in improving the medical status of the chronically ill, many patients with multiple sclerosis have been referred for rehabilitation.[6] This paper is an attempt to critically evaluate the results obtained when all of the facilities of the rehabilitation center are made available to these patients.

From the departments of neurology and physical medicine and rehabilitation, New York University College of Medicine

Read before the Section on Physical Medicine and Rehabilitation at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 24, 1954.

This study was supported by a grant from the Rockefeller Foundation

1. (*a*) Müller, R : Studies on Disseminated Sclerosis with Special Reference to Symptomatology, Course, and Prognosis, Acta med scandinav, supp 222, **133**:1, 1949 (*b*) Thygesen, P · The Course of Disseminated Sclerosis A Close-Up of 105 Attacks Method for Evaluating Therapeutic Approaches, Copenhagen, Denmark, Rosenkilde and Bagger, 1953.

2 Brickner, R. M · Critique of Therapy in Multiple Sclerosis, Bull Neurol. Inst. New York **4**:665 (April) 1936 Putnam, T. J : Criteria of Effective Treatment in Multiple Sclerosis, J. A. M. A. **112**:2488 (June 17) 1939, Treatment of Multiple Sclerosis, A. Res Nerv. & Ment. Dis, Proc. **28**:585, 1950 Schumacher, G A · Multiple Sclerosis, J. A. M. A. **143**:1059 (July 22), 1146 (July 29) 1950, II Treatment of Multiple Sclerosis. Review of Drug, ibid **143**:1241 (Aug 5) 1950 Marks, M.. Observations on Pharmacological Agents Recently Suggested for Multiple Sclerosis, *Ann New York Acad. Sc* **58**:*705 (July 28) 1954*.

3 Nathanson, M : Problems in Evaluating Treatment in Multiple Sclerosis, Am. J. Med. **12**:593 (May) 1952.

4 MacLean, A. R , Berkson, J ; Woltman, H. W , and Schionneman, L · Multiple Sclerosis in a Rural Community, A. Res Nerv. & Ment. Dis, Proc. **28**:25, 1950. MacLean, A. R , and Berkson, J : Mortality and Disability in Multiple Sclerosis· Statistical Estimate of Prognosis, J. A. M. A **146**:1367 (Aug 11) 1951.

5. Wainerdi, H. R . The Management of Patients Who Have Multiple Sclerosis, M. Ann. District of Columbia **23**:7 (Jan) 1954

6. Gordon, E. E : Multiple Sclerosis: Application of Rehabilitation Techniques, National Multiple Sclerosis Monograph, New York, National Multiple Sclerosis Society, 1951. Gordon, E. E , and Carlson, K. E Changing Attitude Toward Multiple Sclerosis Program of Management, J A M A. **147**:720 (Oct. 20) *1951 Guttmann, L.: Principles of Reha*bilitation in Disseminated Sclerosis, Brit. J. Phys. Med **15**:189 (Aug) 1952 Cailliet, R : Rehabilitation Treatment of Multiple Sclerosis and Its Rationales, Occup Therapy **29**:1 (Feb) 1950

REHABILITATION PROGRAM

In the past five years over 200 cases of multiple sclerosis were referred to the department of physical medicine and rehabilitation for evaluation and, if feasible, for the institution of a program. Since most of these patients who were so evaluated were direct referrals, having been culled from a larger multiple sclerosis population, it was obvious that this group was a selected one rather than a cross section, proportionately representative of the disease as it occurs naturally. Recognizing this, the fact that many were seen only for evaluation, and with the limitations of any "control" series, we felt that a statistical evaluation of the clinical features of the illness would be of limited significance, and, therefore, none was carried out in this series. However, careful study of each individual case afforded us the opportunity of assessing the problems underlying the limitations and the type of rehabilitation program recommended for each patient. Since these patients as a group encompassed an extremely broad spectrum in their socioeconomic backgrounds, symptoms, course of illness, and degree of physical disability, certain broad generalizations have become apparent.

We advocate no specific regimen for multiple sclerosis. Each program must rather be a highly individualized one depending on the patient's medical status, needs, and problems. The physician's goals must be based on a realistic appraisal of the patient's medical course. When the disease appears to be relatively stationary or retrogressive there need be no hesitancy in instituting a program; however, if the disease appears to be progressive, a careful appraisal must be made as to whether the immediate goals are realistic to warrant expenditures of the required time, effort, and money. In view of the frequency of exacerbations and remissions, regular and frequent reevaluations of the patient's status and the treatment are essential.

Various medical opinions exist as to the value of an exercise program for the multiple sclerotic patient. Many physicians feel that it is contraindicated, and some even advocate complete bed rest. Others, however, feel that such physical limitation does not positively influence the course of the illness but rather has a harmful effect in that the patient so treated appears to have a higher incidence of secondary complications. These include a poorer nutritional status, associated with a negative nitrogen balance, osteoporosis, atrophy of disuse in the musculature, an increase in the number and severity of urinary problems, including infections and stones, and a greater degree of psychological trauma. There is no evidence that the rehabilitation regimen, with normal use of physical medicine modalities and aids, has any influence on the primary pathological processes causing the symptoms either positively or negatively. Because of this, and our belief that the secondary complications are less frequent, activity programs were always employed in this series with the realization of the patient's limitations.

One of the characteristic features in multiple sclerosis is the patient's ready fatigability, and this must be carefully considered in carrying out the prescribed program. Patients are encouraged to work to this level and beyond, but not to the point of exhaustion. A clear distinction is often impossible, and in most instances we must rely on the patient's judgment. During an acute exacerbation, intensive exercise programs have been deferred, although attempts are made to prevent contracture formations.

The individual rehabilitation program can be prescribed only after detailed knowledge of the patient's disability and the extent of his handicap is ascertained. This necessitates an appraisal of his muscle strength, range of joint motions, and proficiency in the activities of daily living. A careful psychological and social evaluation is imperative. The patient's mental and intellectual status, personality structure, and motivations must be ascertained. His goals must be realistic and must be consistent with those of the physician for successful rehabilitation. Often intensive corrective efforts must be applied to the social and psychological factors rather than to the physical disability, if significant benefit is to be anticipated from the rehabilitation program.

The treatment program is primarily directed toward the acquisition, if possible, of those activities of daily living necessary for proficient function at a specific level in his own environment, i. e., bed, wheelchair, or ambulatory. Whenever possible the specific neuromuscular disability responsible for the deficit in function is corrected by appropriate treatment of the abnormal factors, such as correction or improvement of weak muscles or "coordination exercises." The intelligent use of physical medicine's aids and modalities assumes a significant role in bringing this about. The therapeutic program is directed at functional improvement. An increase in muscle strength is of little value unless it is functionally significant as evidenced by an improvement in the patient's ability to perform his activities of daily living. If therapy is ineffectual or impracticable, attempts must be made to teach the patient to function in as capable a manner as possible with and despite his disability. In certain cases substituted movements can be adequately utilized. Frequently it will be necessary to employ various compensatory prosthetic or self-help devices, including canes, crutches, braces, and wheelchairs. By the intelligent exploitation of the patient's residual capabilities and the use of many of these devices several patients have been made physically independent, and some have been capable of returning to work. Complete self-care is a minimal but significant goal.

EXTENT OF DISABILITIES

The nature and extent of the disabilities encountered in the patient with multiple sclerosis are extremely variable. Occasionally the clinical picture is one of hemiplegia. More commonly spastic paraplegia is encountered. Since the management of these two disabilities has been extensively described they will not be reviewed here. The basic rehabilitative principles used in their treatment, however, are applicable for the patient with multiple sclerosis.

Ataxia is frequently encountered and may reflect involvement of the cerebellar system and its projections or impairment of proprioception. Frenkel's coordination exercises are commonly employed, and vision is more fully utilized as a sensory percept. The cane tip and shoe tip can be painted white to promote better visualization in dim light. Intensive muscle reeducation and progressive resistance exercises, when there is muscle weakness, are often necessary. Occupational therapy may be an extremely valuable phase of this treatment. The results may be of marked value in the properly selected patient.

Spasticity is often one of the most distressing problems. Medical adjuvants, such as mephenesin, have been relatively ineffective in its control. Stretching to relieve spasticity is unphysiological and of little benefit. Proper bracing, however, frequently helps in its management. In occasional instances obturator neurectomy or block has resulted in significant improvement in spasticity and correction of "scissoring." Anterior rhizotomy and intrathecal alcohol blocks were not employed, although occasionally considered. Once these are used the patient loses all hope of any functional return in the denervated areas even should a spontaneous remission occur.

THERAPEUTIC TREATMENT

For gait retraining a precise evaluation of the gait abnormalities is necessary. This includes an appreciation of motor power, the particular muscle groups involved, the degree of incoordination due to ataxia and spasticity, the sensory status, etc., and whether canes, crutches, or braces are necessary. The decision as to whether the patient should be braced must be carefully considered in view of the additional weight and the patient's proneness to fatigue. The degree of ataxia and/or spasticity may be severe enough to preclude walking. If so, standing at least 20 minutes a day, either in braces or on a tilt board, is still advocated to prevent the secondary metabolic complications of inactivity. In retraining, balancing exercises are important before walking is begun. Relaxation exercises are used, and in reeducation, reinforcement techniques with residual movement patterns, e. g., Strümpell's phenomenon, are used. A broad-based gait is often deliberately cultivated. Wading in a pool between parallel bars may be helpful in the early stages.

Passive exercises are of limited value, except for the prevention and correction of contractures. Only a few repetitions of the joint range of motion appear necessary in the patient's routine management. Progressive resistance exercises have their prime use in strengthening weak muscles and muscles in which there has been a supervening atrophy of disuse; however, in view of the patient's proneness to fatigue these exercises must be carried out judiciously.

The physical medicine modalities used above, have a limited usefulness. Heat, whirlpool, Hubbard tank, and Moistaire cabinets are essentially preheating techniques and useful preliminaries to an exercise program or stretching for the correction of contracture. Electrical stimulation seems to be useful only as an adjuvant in muscle reeducation techniques.

Occupational therapy, in addition to its usefulness in complementing and augmenting muscle reeducation and coordination, psychologically benefits the patient by stimulating interest and motivation. It can also serve for prevocational exploration and prevocational and vocational training. One of the significant facts clearly delineated in this study was the observation that too little emphasis has been placed on the vocational potential of the patient with multiple sclerosis. Many of these patients have long-standing chronic cases, some with but little evidence of progression, and could definitely return to some form of gainful employment. It is to be hoped that this problem can be more fully explored and that support from business organizations, unions, and offices of the Division of Vocational Rehabilitation will be forthcoming.

Bowel and bladder control is important to the patient. Often it means the difference between social acceptance and rejection, with all its psychological and economic implications. Bladder symptoms can often be controlled by medicaments, such as atropine, methantheline (Banthine), caramiphen hydrochloride (Panparnit), and bethanechol chloride (Urecholine). If incontinence persists the patient must be trained in the proper use of aids. including urinals, urinary pads, and waterproof pants. With loss of bowel control, strenuous efforts are made to retrain the patient. Most patients can accomplish this readily. In only an occasional instance has this proved ineffectual and have the garments and sanitary devices developed for the paraplegic been necessary.[7]

SUMMARY AND CONCLUSIONS

The rehabilitation of the patient with multiple sclerosis has distinct limitations in view of the natural tendency of the disease to progress. In selected cases, however, if the patient's and the physician's goals are realistic much can be accomplished in increasing the patient's functional capacities by exploiting the techniques and facilities of a comprehensive rehabilitation program. The therapeutic program must be highly individualized and frequently be reassessed. The psychological aspects of such a program are often of considerable significance. The rehabilitation program appears to have no significant effect on the primary disease process per se; however, it often apparently mobilizes the patient's residual capabilities and potentials both physically and psychologically. In addition, a rehabilitation program appears to be a factor in reducing the extent and severity of secondary complications.

Therapeutic nihilism is unwarranted and may prove a disservice to the patient in that it often relegates his medical management to the inadequately trained quasiprofessional practitioner or cultist. It is the physician's obligation to assume the responsibilities for the care of the patient with multiple sclerosis. Warm, supportive, and symptomatic treatment not only can minimize the residue of the neurological dysfunction but may also be of distinct psychotherapeutic value in assisting the patient to make his best possible adjustment.

400 E. 34th St. (Dr. Marks)

---

[7] Muellner, S R; Loman, J., and Alexander, L: The Urinary Bladder in Multiple Sclerosis, J Urol. 68:230 (July) 1952 Buchwald, E. E, McCormack, M., and Raby, E.: A Bladder and Bowel Training Program for Patients with Spinal Cord Disease, Rehabilitation Monograph III, New York, the Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, 1952. Self-Help Devices for Rehabilitation: Manual No 5, Protective Pants for Incontinent Patients, New York, the Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, 1952

PRACTICAL MECHANICAL DEVICES FOR USE BY DISABLED PERSONS

Donald A. Covalt, M.D., New York

In every rehabilitation center, patients are seen who have a paralysis or weakness of muscles, loss of coordination, and/or loss of range of motion. The ideal is to bring every patient back to as near normal as possible through the use of the various disciplines available, such as physical therapy, occupational therapy, and all of the different modalities that are used in these departments. We know that in spite of the best of medical treatment and full use of all the disciplines and modalities that are now available to us there will be a certain number of disabled patients who cannot be returned completely to their original status. Mechanical self-help devices must be developed in order to make these patients as self-sufficient as possible.

There has been in the public mind, and in the minds of patients themselves, the feeling that splints, braces, and mechanical devices are not socially acceptable. I know the patients' attitude has changed, particularly when such a device makes it possible for a patient to dress himself, feed himself, or return to work again. I also have the feeling that the public is beginning to accept such mechanical aids.

At the Institute of Physical Medicine and Rehabilitation, a project has been set up for the development, testing, and gathering together of all such devices. This has been sponsored for the past five years by the National Foundation for Infantile Paralysis. Its function has been to devise mechanical aids and also to collect information and disseminate this information by means of booklets. These booklets are illustrated and contain plans on how to build these devices, or tell where the devices can be purchased and the price. More than 25,000 copies have been distributed throughout the world. The manuals are a cooperative project; many of the ideas and illustrations have been sent to us from a wide variety of sources, and many have been developed at the Institute of Physical Medicine and Rehabilitation. To my knowledge, devices made at the institute are being used by patients in Africa, South America, and Europe as well as in practically every state in the union.

KINDS OF MECHANICAL AIDS

Mechanical devices can be developed to assist the patient in self-care activities such as personal hygiene, eating, and dressing. These devices include adapted utensils, such as various handles, some of them very simple, to be adapted to a spoon or fork or knife so that a patient who is unable to flex his fingers completely will be able to feed himself. Sometimes a long handled utensil, for instance a spoon that has a hinge joint on the end with an extension, enables a crippled arthritic patient who is unable to get his hand to his mouth to feed himself. Elastic shoe laces enable the hemiplegic patient to slip on shoes by himself without the necessity of tying a bow knot every time he dresses. A holder for an electric razor has been developed that enables the patient who has loss of grasp of his hand to shave again. Adjustable toilet seats, 2, 4, and 6 in. higher than the usual seat, are of help to arthritic patients.

Transportation devices such as a wheelchair and hand controls for his automobile will enable a paraplegic patient to travel to and from work. Adaptation of the wheelchair enables the patient with weakened upper extremities to transport himself. A simple rubber tubing that fits over the wheelchair hand rims enables the patient with loss of grasp of hands to push his wheelchair. A mechanical lift has been developed that will assist the patient paralyzed in all four extremities in getting from the bed to the wheelchair and back again. Crutches come in many different types, including the Lofstrand, the triceps crutch, the crutch developed at the Warm Springs Georgia Foundation for polio patients, and the adjustable single shaft with adjustable endpiece wooden crutches. These must sometimes be adapted so the patient can use them with the best possible control. In many instances, it is necessary for the physician to sit down with the patient and find out exactly what individual adjustments must be made to all of these devices.

Communication is another important activity in which many patients can be helped. A pencil holder has been developed in which the pencil can be fitted so that a patient with paralysis of the hand can write again. Special devices have been fitted to typewriters and the telephone to assist the patient. Such simple devices as a dowel rod fitted to a pad strapped to the palms of a poliomyelitis patient who has loss of strength of the fingers will enable this patient to use the typewriter again, even though it is just a "hunt and peck" system. The typewriter can be fitted with a continuous single roll, and after the patient has completed his typing the letters can be torn out and mailed by a member of the family. Instead of having to dial a telephone, a patient with a weakened upper extremity can use an ordinary large laboratory stand and clamps that hold the telephone in such a position that he is able to speak into the receiver and to hear. A simple toggle switch is fitted lower on the control box or may be attached to the desk; by moving this to a position where he can reach it with his arm, the patient is able to get the operator and give his number. Special spectacles have been developed with prisms so that a patient who must lie flat in bed can read a book without lifting his head. Special devices are also available for the home, such as stairs with low rise, ramps, elevators, and special furniture. A special chair has been developed for the arthritic patient with a frozen spine and ankylosed hips who is not able to sit but only to stand or to lie in bed; the new chair is fitted to the patient in such a way that it will support his weight while he is in the standing position. We believe it is important also to develop devices for recreation and avocational pursuits.

Associate Professor, New York University College of Medicine, Department of Physical Medicine and Rehabilitation; Associate Director, Institute of Physical Medicine and Rehabilitation of New York University-Bellevue Medical Center.

Read before the Section on Physical Medicine and Rehabilitation at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 22, 1954.

FINDING THE PROPER AID

There comes a time when the physician is forced to realize that the patient has gone as far as possible in developing muscle strength, range of motion, and coordination. Then it is time to sit down with the patient and the staff available to him and analyze the physical factors that the patient has left. The patient's home environment and the kind of work to which he is to return must be decided and then the device suggested for those areas wherein the patient needs help. At this time also, temporary prescriptions for mechanical aids are discussed. The practical ones are finally committed to the laboratory technician in order that they may be made. Fittings and adjustments are needed from time to time, and sometimes a complete device is discarded and a new one made, until the proper device is made as light as possible and still strong enough to do the job.

Mechanical devices can help a patient become more self-sufficient by assisting the return of muscle function and range of motion, compensating for muscle weakness and limitation of motion, helping to control coordination, helping to control spasticity, helping to replace body parts, helping to compensate for loss of hearing, sight, or sensation, and aiding a nurse, attendant, or member of the family and thus minimizing the need for personal assistance.

A decision must be made as to whether a device is going to be a temporary affair or one the patient will use the rest of his life. If the device is going to be permanent, proper selection of materials for stress and strain, use, and weight must be considered. Self-help devices should always be made with social acceptability kept in mind. The cosmetic effect of such a device can often be increased by the proper use of materials and flesh-colored paint in order for the device to be as unobtrusive as possible. We have at this time a wide range of materials with which to work in order to make devices that not only get the job done but also are light and as attractive as possible. Light metals such as Duralumin and magnesium are available. The use of glass cloth (Fiberglas) impregnated with resin has helped us in many of our splinting problems. Plastics of many kinds are available and can be utilized to fit any situation. A wealth of material is available for such self-help devices.

COMMENT

At the Institute of Physical Medicine and Rehabilitation we have found that the use of an active imagination plus the mechanical skill and ingenuity of our two technicians and the practical common sense of the head of the department, who is an occupational therapist, have all combined to make this a valuable service to our physicians. I have sat in at some of the conferences with the staff of this department and a patient, a young man with a completely flail right upper extremity. We were seeking to develop a device that would enable the patient, a salesman, to write his orders. Using the idea of the Handy Hand, we finally duplicated the device made by Robin Aids, with a plastic hinged outer covering for the patient's arm, hand, and fingers, operated by the opposite shoulder. The man could flex and extend the fingers of this hand enough to write and also to use it as an assisting hand. I know of no greater satisfaction than to be able to help in the development of a mechanical device that enables the patient to become self-sufficient and to return to work.

400 E. 34th St. (16).

POSTOPERATIVE AEROSOL THERAPY

Max S. Sadove, M.D., Chicago, Cecelia E. Miller, M.D., Hines, Ill.
and
Arthur T. Shima, M.D., Chicago

Aerosol or nebulization therapy has recently been introduced in the care of the patient who has undergone surgery. This phase of medical care is in a state of flux and confusion in many segments of the medical profession. It is the purpose of this paper to give our views on the place of aerosol or nebulization therapy in the care of patients after operation. There are many ramifications to proper postoperative care. The chief concern of this paper, however, is to discuss the role of the aerosols. We do not mean to imply that aerosol therapy is of prime importance, yet we feel that this form of medication has much to offer many patients after operation. In numerous instances, morbidity and mortality may be decreased significantly by the judicious use of this adjuvant to the over-all therapy of the patient.

DEFINITION OF TERMS

It may be well to define our concept and understanding of the terms and techniques related to this form of therapy. Pertinent terms are humidity, bubbling devices, steam humidification, supersaturation or "cold steam," atomization, and aerosolization or nebulization.

Humidity.—Humidity is a term used to express many things dealing with wetness or dampness. There are two scientific terms that should be defined and clearly understood. Absolute humidity is a term used in the physical sciences; it is defined as the actual amount of water vapor, expressed as the weight of vapor present, in a given volume of gas at a specific temperature. There are so many grams of water per cubic meter or so many ounces per cubic foot, relating weight to volume at a specific temperature. Relative humidity is a term used in the clinical sciences, and by common usage it is shortened to "humidity." It indicates the amount of water vapor present in a volume of gas as a percentage of the maximum possible amount at the same temperature. A rela-

---

From the Department of Surgery, Division of Anesthesiology, University of Illinois College of Medicine, Research and Educational Hospitals (Drs. Sadove and Shima), and the Veterans Administration Hospital, Hines, Ill. (Dr. Miller).

tive humidity of 40% at a specific temperature means that there is 40% of the water vapor present that could be contained in a saturated atmosphere. High humidity is a confusing term, often used loosely. In many American homes a humidity of 45% may be termed high. In a "high humidity" room relative humidities of 70 to 90% may be considered high. From 40 to 80% in an oxygen tent may be considered "high humidity"; therefore, the meaning of this term is not concise. It merely implies that there is more humidity in the atmosphere than is usually present under those conditions in a specific locality.

It is even more confusing when one realizes the role that temperature plays in the meaning of relative humidity; for example, in a room with a cool temperature there may be an atmosphere that is interpreted as having a humidity of 100%. Yet, if a person inhales this 100% atmosphere, by the time the air is warmed on its passage to the lungs the air that reaches the alveoli has only a 70% humidity, due to the higher body temperature. If the humidity, as in most instances, is about 40%, the shift in humidity is even more pronounced. As the air is raised to body temperature the relative humidity may fall as low as 15 to 20%. It is a known physiological fact that the alveolar air has a humidity of 100% and a temperature of 37 C or 98 F. It is obvious, then, that the inspired air must absorb sufficient moisture to bring its humidity up to 100%, and this is done at the expense of the hydration of the respiratory passages. The amount of absorption is dependent upon the relative humidity of the inspired air. It becomes clear that, insofar as the body economy is concerned, even the so-called high humidities are inadequate, because they still abstract water from the respiratory passages. The concept of adequate humidity, for our purposes, always implies a supersaturation with actual suspension of water particles, so that water may tend to be added rather than extracted from the respiratory passages.

Bubbling Devices.—Bubbling devices have been in use for many years, and, unfortunately, are still in use in many localities. It is true that the smaller the gas bubble, and the longer the distance it travels through a water chamber, the higher will be the resultant humidity; however, as a result of the cooling and short passage through the water, the gas will volatilize such small quantities of water that these instruments are relatively ineffective from the physiological standpoint. At best this apparatus creates humidity that is not adequate to add water to the respiratory passages but almost always dehydrates them. A humidity of about 60 to 70% may be obtained by bubbling devices; however, this is inadequate to prevent dehydration because of the warming of the air en route to the alveoli. Occasionally the bubbling devices may be used for specific therapy, such as for the transport of an alcohol vapor in the treatment of pulmonary edema. Nevertheless, the actual amount of alcohol transported by this technique is relatively small.

Steam Humidification.—The value of steam in the care of laryngotracheobronchitis, bronchial irritations, tracheitis, and similar conditions has been dramatically presented to both the public and the medical profession for many years. It would be foolhardy to state that these techniques are either worthless or ineffectual; nevertheless, a reexamination of this technique might bring forth several points. This technique has always been uncomfortable because it increases the temperature of the room and of the person to whom it is being administered. This increased temperature causes an increased metabolic demand on the body and, in many instances, negates some of the efficiency of the therapy. The technique is cumbersome, difficult to manage, and unpleasant. With proper steam generating equipment it is quite possible that water is not abstracted from the body tissues, but the equipment is frequently a burn hazard. The steam generating apparatus does not really provide an effective overall supersaturated atmosphere, because, as the distance from the source of steam increases, the temperature decreases and the moisture diffuses into the room air. The atmosphere inhaled by the patient is only about 70 to 100% saturated, which is dehydrating to the respiratory system. The patient cannot be placed too near the steam apparatus for fear of producing burns or unpleasant heat. It becomes obvious that the effectiveness of steam humidification is again only relative. In those instances in which the patient actually inhales the steam the humidity is high, but the process is inadequate from a physiological standpoint.

"Cold Steam."—Advancements have given all of the advantages of hot steam in what is now popularly known as "cold steam" or supersaturation. Cold steam can be produced by various types of mechanical devices. It is important to emphasize that this vapor is cold, it has a high content of water particles, and the uniformity of the particle size can be more adequately controlled. Drugs and techniques that are impossible with the hot steam method can be utilized. These are supersaturation techniques. Many persons have been concerned lest fluids of large quantity remain unabsorbed in the lung and become injurious. Moritz[1] has shown that even a 16 lb. (7.3 kg.) dog can adequately absorb, over a two hour period, 750 cc. of water instilled in the lung. Other work along this line by Gordon[2] and associates at the University of Illinois has shown, during experiments on drowning, that quantities of fluids far in excess of that nebulizable by any available equipment can be absorbed with ease. The patient with bulbar poliomyelitis is an example of the "poor risk" patient who can be exposed to aerosol therapy for long periods with no sign of respiratory distress due to the addition of quantities of moisture to his atmosphere. Thus, fear of damage to the respiratory system is not a contraindication to the administration of aerosol therapy.

Atomization.—Atomization is the process wherein a gas or air in rapid transit blows across an orifice, breaking a liquid into small particles. The process of atomization, however, has a disadvantage in that the variation in size between the smallest and largest particles is considerable, and the particles themselves are of a size larger than those obtained by nebulization.

Nebulization.—Aerosolization and nebulization are herein considered to be synonymous. Nebulization, like atomization, is the process wherein a gas or air in rapid transit blows across an orifice, breaking a liquid into small particles, and then, unlike atomization, this liquid-gas droplet mixture is blown against a baffle plate that breaks the particles into smaller sizes and at the same time causes the larger particles to fall back and be removed from the over-all passage of the aerosol. Thus, nebulization or aerosolization is a technique far superior to atomization, because it gives a smaller and more uniform particle with less variation in size. The size of the particles is of prime importance in determining upon which portion of the respiratory tree they will primarily exert their effect. It has been stated[3] that if a particle size is larger than 30 μ it will be baffled out in the trachea. The terminal bronchioles baffle out particle sizes from 10 to 30 μ, the alveolar ducts baffle out particle sizes from 3 to 10 μ, and the air sacs baffle out particle sizes from 0.5 to 3 μ. If a particle size is smaller than 0.5 μ it may be exhaled with the next breath because of its extreme lightness. Almost all nebulizing apparatus on the market give a relatively adequate particle size, and the drugs or liquids probably will be carried to all portions of the respiratory tract. It is hoped that nebulizers that are being developed will produce a particle size range in which the mean is 3 μ.

---

[1] Moritz, A. R.: Chemical Methods for Determination of Death by Drowning, Physiol. Rev. **24:** 70, 1944.

[2] Gordon, A. S., and Raymond, F.: Factors Contributing to Ventricular Fibrillation in a Drowning Dog, to be published.

It is beyond the scope of this paper to deal specifically with the technical aspects of the available nebulizers. It is not possible as yet to obtain all the necessary apparatus (generators, tubing, and masks) in a compact unit; however, with a little ingenuity one can improvise the available equipment to clinically meet the physiological demands of the patient. The equipment now available, although satisfactory, is undergoing modification to meet the specific problems at hand. Many satisfactory pieces of equipment have failed to function adequately because there has been lack of proper care and supervision. Probably the most important aspect has been the failure to follow directions for adequate cleansing of the equipment after each use. As a result, the fine jets become clogged and nebulization is inefficient. The use of drugs that are not completely dissolved is an added difficulty to the proper functioning of equipment because of the increased ease in blocking the capillary tubes. The instrument for nebulization must be checked at frequent intervals to see that there has been no obstruction to the jet. Special dissolving solutions and equipment should be available to properly maintain the apparatus.

There are two types of aerosol therapy. In the first type, oxygen is the principal physiological agent. Alevaire and/or other agents are of secondary importance in that they largely serve to increase the efficiency of the oxygen therapy. In the second technique, oxygen or air is used as the vehicle and/or motive force for nebulizing therapeutic agents. Air may be used when oxygen is physiologically contraindicated or a potential hazard. Oxygen, as contained in steel cylinders, is a completely anhydrous gas and consequently a potent dehydrating agent; therefore, its use under most clinical conditions requires adequate humidity. Objection to oxygen as a vehicle is based on the fact that oxygen has a physiological effect that may be detrimental to the poor risk patient, because sudden shifts of oxygen concentration may call upon physiological alterations that can throw a strain on the body mechanisms. In those instances in which aerosolized fluids are the primary therapeutic agents oxygen as a vehicle can be adequately replaced by air. This air may be provided by an air compressor; however, the air compressor should not be the variety in which the air is compressed through the mechanism, where it may become contaminated by extraneous materials such as oil. The pumps should be of a variety that can be used continuously for 24 hours or more without the hazard of breakdown or mechanical failure, and they should be able to maintain a minimum of 10 lb. per square inch effective pressure. Ingenuity and adaptation of standard pieces of equipment can adequately meet the needs of almost all patients requiring aerosol therapy.

PHYSIOLOGICAL CONSIDERATIONS

There are many factors that predispose toward postoperative chest complications. Probably one of the important factors is the preoperative condition of the patient, especially the state of his respiratory system. Another factor of importance is the site of operation. Statistics show that abdominal operations have a greater incidence of chest complications than operations upon the extremities. Operations on the upper abdomen have a greater morbidity than those on the lower abdomen, with the exception of an appendectomy requiring drainage of an appendical abscess. Many of these factors are beyond the control of the surgical team; however, there are factors that are controllable.

The defense mechanisms of the respiratory system are: the warming, wetting, and filtering action of the upper respiratory tract, the sneeze reflex, ciliary activity, peristaltic movement of the bronchioles, and the cough reflex. The undulating and wave-like motion of the cilia aids in the propulsion of liquid secretions and extraneous materials toward the portion of the tracheobronchial tree where the cough reflex can be initiated and further propel these substances toward the pharynx, where they may be adequately eliminated. The cilia are present along the tracheobronchial tree down to the respiratory bronchioles. Elastic fibers, which course longitudinally in the tunica propria of the mucosa, extend down to the alveoli. These elastic fibers are responsible for the recoil of the bronchioles with each expiration. This peristaltic movement aids in propelling secretions along the respiratory bronchioles and ducts to the portion where the cilia can exert their influence. The peristaltic movement also aids ciliary activity; therefore, any drug, anesthetic agent, or condition that depresses any or all of these mechanisms contributes to postoperative chest complications.

The consistency of the secretions is also a factor to be considered; the more fluid the secretions, the easier is the task of the defense mechanisms in eliminating them. Conversely, as the secretions become more viscid it becomes more difficult for ciliary activity and bronchiolar peristaltic movement to propel them up the respiratory tract and a greater cough effort is necessary to expel them. Anything that tends to dry the secretions or render them more viscid—dehydration, use of anhydrous gases, excessive use of the belladonna drugs—renders the defense mechanisms less effective and sets the stage for atelectasis.

---

[3] Somatic and Psychiatric Treatment of Asthma, Abramson, H. A., editor, Baltimore, Williams & Wilkins Company, 1951.

Conditions that contribute to postoperative chest complications are: agents that tend to dry the secretions or render them more viscid; respiratory depressants; debilitating conditions that lower the resistance of the patient; mechanisms or conditions limiting the function of the diaphragm; excessive use of narcotics that depress the cough reflex and ciliary activity; respiratory obstruction; any condition that produces leakage into the alveoli, such as hypoxia or hypoxemia; many conditions that produce engorgement of the lung tissue, such as cardiac failure; or any condition that produces a transudate or exudate into the alveoli, such as bacteremia. The choice of anesthetic agent and/or technique used in any particular instance is a minor factor in contributing to postoperative chest complications. The other major contributing group of causative conditions are the cardiovascular pathological states, such as cerebrovascular accidents, pulmonary embolic phenomena, thromboses, and infarcts. These states are not easily preventable, but with proper aerosol inhalation therapy the resultant morbidity and mortality may be markedly diminished.

Atelectasis and pneumonitis are among the two commonest complications that occur in patients after an operation. Atelectasis may be defined as that condition wherein alveoli are collapsed, either as a result of some external force or as a result of a relative blockage of the tracheobronchial tree with the absorption of the gases behind the so-called plug. Postoperative pneumonitis, which used to occur frequently, now is infrequent as a result of better postoperative management and the use of antibiotics. In fact, a postoperative pneumonia is most frequently the result of a neglected atelectasis. Indeed, we have found a pneumonitis secondary to an operative procedure so rare as to be noteworthy; therefore, management of atelectasis is a major problem. The cleansing of the tracheobronchial tree and the proper maintenance of the physiological resistance of the person and his respiratory tree are major factors in protection against atelectasis. It is beyond the scope of this paper to discuss the factors involved in the production of atelectasis and pneumonia. We can merely mention some of the factors concerned and discuss them as they pertain to inhalation therapy. Some of these factors are tight dressings and binders that restrict respiration, pain that limits respiration, the patient's position on the operating table or in bed postoperatively that limits respiration, debilitating infection, and the presence of a chronic bronchitis.

There may exist an already altered respiratory tree in users of coal-oil stoves, miners, steel workers, and chronic smokers, all of whom are constantly irritated by noxious fumes or irritant vapors, as well as in persons who have chronic sinusitis or chronic bronchitis. These persons produce increased quantities of secretions and have varying degrees of inflammation and infective processes. If they are not debilitated they are able to handle this pathological process by their cough reflex, ciliary activity, and over-all resistance; however, when they have been operated on their ciliary activity is depressed, their secretions are thickened, or their resistance is lowered, and they become an increased risk from the standpoint of postoperative chest complications. Therefore, it becomes obvious that probably the wisest course to follow after operation in the patient with any of these predisposing factors is to take adequate prophylactic as well as therapeutic measures. Aerosol therapy, properly used, offers both of these potential benefits.

POSTOPERATIVE AEROSOL INHALATION THERAPY

Nebulization therapy may be discussed in regard to the therapeutic effects that it can produce. These effects are vasoconstriction of the respiratory mucosa, bronchodilatation, antihistaminic effects, antibiotic effects, administration of digestive enzymes, and detergent or wetting action. Inhalation therapy should be used in a manner similar to drug therapy of any type. Routines should be condemned; specific drugs and agents should be used with definite purposes and objectives in mind. In many instances the inhalation of an agent by the lungs creates a higher concentration or a greater effect locally than can be obtained by the use of a similar drug by intravenous, intramuscular, or oral route. As purulent or mucopurulent secretions adhere to the mucosa and the micro-organisms multiply on the surface, systemic antibiotics may be ineffectual in eliminating these bacteria; therefore, the greatest effects may accrue in many instances from both the systemic and the local application or utilization of drugs.

Vasoconstrictor drugs such as phenylephrine (Neo-Synephrine) hydrochloride may be used for their temporary vasoconstrictive action upon respiratory mucosa, making a more adequate passage for respiratory exchange and for medicaments. These are to be used only for those specific conditions when engorgement renders inhalation therapy ineffective. Bronchodilators have their greatest advantage in those instances in which bronchoconstriction is a complicating factor. Drugs such as isopropylarterenol (Isuprel) hydrochloride or epinephrine may be used in those persons who have a specific disease, such as asthma, or in those instances in which bronchoconstriction is an element of the pathological state. Occasionally the systemic use of the bronchodilators as well as local application is of marked benefit. Antihistaminics may be placed in the aerosol prescription in order to obtain an antihistaminic effect in the pulmonary tree. In many instances it may be wise to combine the antihistaminic with a bronchodilator or a vasoconstrictor drug or with any or all of the other techniques; however, the antihistaminic, bronchodilator, and vasoconstrictor drugs are of lesser importance in inhalation therapy as applied to the patient after operation.

Antibiotics may be added to the tracheobronchial tree in two forms. They may be inhaled intermittently in relatively high concentrations for a specific infection, or they may be used continuously in a more dilute solution in combination with other agents and techniques. These drugs should not be used empirically, but an effort should be made to culture, identify, and test for the sensitivity of the organism present. The antibiotics indicated for the specific organism should then be used with the technique that is most advantageous for the particular patient. Tests for the identification of the organism and its sensitivity should be repeated in those instances in which this method of therapy is used over a long period of time, since the bacterial flora and the sensitivity may change with the passage of time and the use of the antibiotics. Digestive enzymes such as crystalline trypsin (Tryptar) are added by some to certain inhalation prescriptions. We prefer not to use it because of its irritating and anaphylactoid potentialities.

Wetting agents such as Alevaire, a balanced detergent formula specifically designed for aerosol therapy, may be used. Alevaire consists of a mixture of 0.125% Superinone (oxyethylated tertiary octylphenol-formaldehyde polymer), 5% glycerin, 2% sodium bicarbonate, and water. When properly nebulized it meets the requirements for supersaturation or aerosol therapy. These particles, because of the intense supersaturation of the gas and the stabilizing effect of the small amount of glycerin, do not tend to evaporate before they reach the alveolar portion of the lung. This factor is of equal importance when the material is used as a vehicle for any of the agents mentioned above or when used alone for the assurance of a supersaturated humidity. Through its surface action wetting characteristics and its thinning action Alevaire aids in the control and elimination of secretions. With supersaturation the secretions are maintained liquid and the cilia can function more efficiently with greater ease of movement of the less viscid secretions; therefore, secretions may be brought to the area where they can stimulate the cough reflex and be eliminated. The cough reflex is more effective on these thinned and watery secretions and the pain and trauma of the paroxysmal bouts of coughing is reduced. Alevaire, alone or in combination with other specific drugs, offers another definite aid in successfully combating the major hazards of postoperative chest complications. Patients after operation are subject to respiratory complications and are candidates for the prophylactic or therapeutic use of Alevaire with proper nebulization except, perhaps, patients with pulmonary edema or those requiring a restricted sodium intake. Alevaire has been demonstrated to be a safe and stable drug for aerosol treatment of both adults and children. We have used this solution with increasing frequency for two years without clinical appearance of irritation to the mucosa of the respiratory tract. We feel that it is a valuable agent and a vital adjunct in the production of true high humidity therapy, as well as offering a safe and effective agent in mobilizing secretions.

Alevaire may be administered from any nebulizer capable of delivering the previously recommended particle sizes, and functioning efficiently at gas flows from 4 to 10 liters per minute. A compensated regulator should be used in regulating the actual amount of gas delivered, as the nebulizer sets up a back pressure that may produce a false reading on the customary pressure gauge. The nebulizer should be easily cleaned and have a supply chamber with a minimum capacity of 250 cc., or should be readily adaptable to continuous supply. The amounts of Alevaire used are regulated by the severity of the patient's condition and the capacity of the nebulizer. It may be desirable to administer the aerosol continuously in severe cases. In rare instances as much as 1,500 cc. daily may be used; intermittent therapy may be adequate in less serious cases. The aerosol should be given for at least one hour at each treatment, preferably at least three times a day and more frequently if necessary. The length of aerosol treatment and the intervals between treatments should be regulated by the patient's response to treatment and should continue as long as the need for their particular benefits exists.

SPECIAL INDICATIONS

The patient who has undergone tracheotomy loses the warming and humidifying mechanisms of his upper respiratory tree, causing irritation of the mucosa and drying of the secretions of his lower respiratory tree. In addition, because he is unable to close his glottis effectively, he loses the power of building up pressure and its sudden release, which constitutes the cough; therefore, he struggles or strains with a blowing action through his tracheostomy in an attempt to eliminate his secretions. The patient who has been subjected to tracheotomy should always be considered to have irritation of his bronchial tree with mucopurulent viscid secretions, and, therefore, he becomes a candidate for chest complications. Aerosol therapy should be utilized prophylactically to prevent irritation and therapeutically as an aid in the control and elimination of secretions the neglect of which are so apt to lead to chest complications. Children with respiratory complications have been treated by humidification, even of a relatively poor variety, with so marked a benefit that it is part of the folklore treatment of children of many races and peoples. Irritation of the tracheobronchial tree from any cause is productive of secretions that, even though minute in total volume, are of dramatic consequence in the respiration of the infant or child. The thinning of the secretions or the rendering of the cough reflex more productive is of far greater relative importance to the child than to the adult. Exhaustion and actual asphyxia have resulted from simple tracheobronchitic infections that will respond with dramatic suddenness to adequate aerosol therapy.

SUMMARY

After operation all patients are potential candidates for chest complications. There are, however, numerous predisposing factors that may increase the likelihood of this complication. Adequate use of specific aerosol therapy will assist the surgical team in the management of the patient after operation and in the prevention of chest complications.

1819 W. Polk St. (12) (Dr. Sadove).

Hazards of Blood Transfusion.—The increase in the use of blood has been a mixed blessing. . . . The more frequent use of blood has saved many lives where formerly people died because blood was not available. However, the use of blood has been abused in many instances, and blood given in situations where it is not indicated. This nonchalant use of blood should be viewed with great concern since blood transfusions have a higher mortality rate than appendectomy or ether anesthesia. Indeed, the mortality from blood transfusions has been estimated at one death in every 1,000 to 3,000 transfusions. . . . Seven types of transfusion reactions can occur. They are: (a) febrile reactions, (b) anaphylactic reactions, (c) air embolism, (d) transmission of disease, (e) bacterial contamination, (f) circulatory overloading, and (g) hemolytic reactions caused by incompatible blood.—E. H. Sanneman Jr., M.D., Hazards of Blood Transfusions, with Illustrative Fatal Cases, *Journal of Kentucky State Medical Association*, August, 1954.

UREMIC PERICARDITIS IN ACUTE AND CHRONIC RENAL FAILURE

Warren Wacker, M.D.
and
John P. Merrill, M.D., Boston

The occurrence of a fibrinous pericarditis as a terminal event in chronic renal failure has been known for many years. That this pericarditis can be painful is an accepted fact.[1] The purpose of this paper is to report the occurrence of pericarditis in patients with acute renal failure and to compare this with its occurrence in chronic renal failure. A second purpose is to describe the type of pain that occurs as a result of uremic pericarditis. All patients studied were seen by one or both of the authors.

ACUTE RENAL FAILURE

The hospital records of 77 patients with acute renal failure of varying cause were reviewed; 40 of these patients, or 52%, died. Of the 63 patients who did not have pericarditis, 32, or 50%, died. A pericardial friction rub was heard in 14 of the 77 patients, or 18%. Of these 14 patients, 6 survived and 8, or 57%, died; postmortem examinations were done in 6 of the 8 who died. All of these autopsies revealed morphological evidence of pericarditis. None of the patients had suppurative pericarditis at necropsy, and all of the exudates were sterile on culture.

A concomitant bacterial pneumonitis or a pneumonitis with pleural effusion was present in 10 of the 14 patients. The blood urea nitrogen at the time the friction rub appeared ranged from 77 to 285 mg. per 100 cc., with an average of 124 mg. per 100 cc. The duration of renal failure prior to the appearance of a pericardial friction rub averaged 7 days with a range of 4 to 11 days. Pain in the precordial region or left shoulder was either absent or not mentioned in 13 of the 14 cases. One patient had a steady substernal pain not affected by respiration. At postmortem examination this patient was found to have an acute fibrinous pericarditis and multiple small pulmonary emboli.

CHRONIC RENAL FAILURE

Forty-three patients dying of chronic renal failure of varying origins (chronic glomerulonephritis, chronic pyelonephritis, polycystic disease, and arteriolonephrosclerosis) were studied. Twenty-two, or 51%, of these had pericarditis diagnosed both clinically and at necropsy; eight complained of pain. Seven of these patients with uremia due to either chronic glomerulonephritis or chronic pyelonephritis, who complained of pain and had pericardial friction rubs, were questioned closely by us concerning the location and character of their pain. All of these patients complained of substernal pain. The pain was severe and crushing in three of the seven. In four of the patients it radiated to the left shoulder. In all but one of the patients it was pleuritic in type. The pain was present in all phases of respiration, but it was increased by deep breathing or coughing. One patient noted that the pain was synchronous with the heart beat when he was lying on his right side. The pain was partially relieved in all of these patients when they sat up and leaned forward.

COMMENT

Pericarditis occurring in advanced uremia due to chronic renal disease is a well-known entity.[2] In the autopsies on patients with chronic glomerulonephritis reported by Richter and O'Hare it was found to occur in about half of the cases. This is almost identical to the incidence in our own series. That a similar type of pericarditis occurs in a significant percentage of patients with acute renal failure, however, has not been reported previously. The etiology of uremic pericarditis is obscure; cultures of the exudates are sterile. Its presence does not correlate with the level of the elevated blood urea nitrogen. Fibrinous pericarditis also occurs in patients with terminal cancer; in this instance, too, its cause is obscure.[3]

The appearance of a friction rub in chronic renal disease heralds the approach of death usually within one to two weeks after its onset. In our series of patients with chronic renal failure the average duration of life was 10 days after the appearance of a friction rub. There are, however, occasional patients who have lived for longer periods after the appearance of a friction rub. We have seen two such patients who had definite pericardial friction rubs which disappeared, in one case for 8 weeks and the other for 12 weeks. The rubs then reappeared shortly before death. Both of these patients, however, undoubtedly owed the prolongation of their existence to one or more dialyses with the artificial kidney. A pericardial friction rub, however, does not have the same grave prognostic significance in acute renal failure. The mortality of patients with acute renal failure and a pericardial friction rub (57%) was not significantly different from the mortality of all the patients with acute renal failure (52%).

Pain appears to occur less frequently in patients with acute renal failure and pericarditis than in patients with chronic renal failure and pericarditis. However, one must bear in mind that many of these patients were either comatose or in semicoma during the time that the friction rub was audible and, therefore, might not be expected to complain of pain. Although other authors have stressed the occurrence of pain in infectious rather than uremic pericarditis, pain of one type or another occurred in about half of the cases reported by Richter and O'Hare.[1] In our series of chronic renal failure it occurred in 36% of the cases.

From the Department of Medicine, Peter Bent Brigham Hospital, and Harvard Medical School.

This work was supported in part by the Medical Research and Development Board, Office of the Surgeon General, Department of the Army, and in part by grants from the National Heart Institute, U. S. Public Health Service, and American Heart Association.

[1] Richter, A. B., and O'Hare, J. P.: Heart in Chronic Glomerular Nephritis, New England J. Med. **214**: 824, 1936.

[2] Keith, N. M.; Pruit, R. D., and Baggenstoss, A. H.: Electrocardiographic Changes in Pericarditis Associated with Uremia, Am. Heart J. **31**: 527, 1946. Richter and O'Hare.[1]

[3] Smith, H. L., and Willius, F. A.: Pericarditis; Terminal Pericarditis, Arch Int. Med. **50**: 415 (Sept.) 1932.

The nature of the pain in uremic pericarditis is quite variable. It is therefore pertinent to review some of the experimental studies designed to demonstrate the structures and pathways involved in the production of pain of pericardial origin. In 1927 Capps[4] reported a study in which he had introduced a silver trochar into the pericardial cavity of patients with large pericardial effusions in order to define which portions of the pericardium were sensitive to pain. He found that most of the pericardium was devoid of pain receptors. However, when the external layer of the inferior portion of the parietal pericardium was stimulated, a pain was elicited which was referred to the neck and left shoulder. This pain was similar to the pain produced when the central area of the diaphragmatic pleura was stimulated. It was therefore assumed that this area of the pericardium was supplied by branches of the phrenic nerve. Since the remainder of the pericardium was devoid of pain receptors, it was postulated that the other types of pain associated with pericarditis are due to involvement of the contiguous parietal pleura.

In 1929[5] Alexander, Macleod, and Barker studied the sensory response of the pericardium under direct vision in a patient with acute streptococcic pericarditis who underwent pericardotomy for the purpose of drainage. Their findings differed from those of Capps. It was found that severe substernal pain resulted when pressure was applied against the anterior thoracic wall from inside the pericardial sac and that a sense of pressure was obtained when pressure was applied laterally or posterolaterally. Pinching or pricking the parietal pericardium gave rise to severe sharp substernal pain. They also found, as had Capps, that the visceral pericardium was insensitive to pain. They did not elicit pain in the shoulder or neck when the lower portion of the external layer of pericardium was stimulated.

It is not believed that any complete conclusions can be drawn from these experimental observations on the basis of what is seen clinically in patients. However, it would seem that some of the observations of Capps are in keeping with the clinical findings; namely, that pain referred to the shoulder does occur and that pleuritis is associated with the pericarditis in a significant number of cases in which pain is present. There is no hint from these experimental studies which explains the origin of the steady substernal pain and pressure which at times is so severe as to be mistaken for an acute myocardial infarction. The pain which occurs in uremic pericarditis is not unlike that which occurs in acute idiopathic pericarditis.[6] In the former, however, evidence for an infectious cause is lacking although bacterial pneumonitis with pleural effusion is a frequent concomitant.

SUMMARY AND CONCLUSIONS

Our study showed that pericarditis occurs in about 18% of cases of acute renal failure; that the appearance of a pericardial friction rub in acute renal failure does not have the same grave prognostic significance as it does in chronic renal failure; and that pericarditis occurs in about half of the patients dying of chronic renal failure. In keeping with the findings of earlier experimental studies to elicit the pathways and structures involved in the production of pericardial pain, our clinical observations suggested that precordial pain of a pleuritic type occurs in many patients with uremic pericarditis and pain referred to the left shoulder occurs in about half of the patients who have painful pericarditis.

721 Huntington Ave. (15) (Dr. Merrill).

[4] Capps, J. A.: Pericardial Pain: Experimental and Clinical Study, Arch Int. Med. **40**: 715 (Nov.) 1927.

[5] Alexander, J.; Macleod, A. G., and Barker, P. S: Sensibility of Exposed Human Heart and Pericardium, Arch. Surg **19**: 1470 (Dec.) 1929

[6] Goyette, E M: Acute Idiopathic Pericarditis, Ann Int Med. **39**: 1032, 1953.

CHANCES FOR SURVIVAL IN ACUTE MYOCARDIAL INFARCTION

SURVEY OF THE ACUTE PHASE IN 1,318 PATIENTS

Henry I. Russek, M.D., Staten Island, N. Y.
and
Burton L. Zohman, M.D., Brooklyn, N. Y.

Physicians and patients of the present generation are well aware that heart disease is the most common cause of death in the United States. The mortality rate of patients with coronary artery thrombosis is generally quoted as ranging from 35 to 65%, with an average of 50%.[1] For many years victims of coronary disease have been instilled with a fear of sudden death or a dread of permanent invalidism; the ensuing psychological effects have seriously limited physicians in providing the proper care and rehabilitation. Current medical teaching, as well as contemporary texts on cardiovascular disease, invariably emphasizes that the outcome of an attack of acute myocardial infarction is unpredictable because of the constant threat of sudden, unexpected death even for persons convalescing favorably. This prevailing view has been responsible for a gloomy outlook on the part of the attending physician even in cases presenting a benign clinical picture. Too often the pronouncement of a poor prognosis represents an attempt on the part of the physician to protect himself if the patient suddenly dies or to attribute some virtue to his therapy if the patient does well while suffering from such a serious disease.[2] Cardiologists or

---

From the Cardiovascular Research Unit, Department of Medicine, United States Public Health Service Hospital, Staten Island, N. Y., and the State University College of Medicine at Brooklyn

Read at the Third Annual Convention of the American College of Cardiology, Chicago, May 29, 1954.

This study was a joint project with the National Heart Institute, U. S Public Health Service, Washington, D. C, in conjunction with the Medical Services of Kings County and Maimonides Hospitals, State University College of Medicine at Brooklyn.

[1] Master, A. M; Jaffe, H. L., and Dack, S: The Treatment and the Immediate Prognosis of Coronary Artery Thrombosis (267 Attacks), Am Heart J **12**: 549, 1936.

[2] Sprague, H B: Mental Adjustments to Heart Disease: The Factors Involved in Disability, J. A. M A. **112**: 2384 (June 10) 1939.

practitioners frequently justify their conservatism in prognostication by citing one or two cases in their experience in which sudden death resulted despite a benign clinical picture. At present, however, there is a lack of statistical data that would indicate whether "sudden unexpected death" is a common or infrequent event among patients sustaining clinically mild attacks. If a physician seeks for guidance in the textbooks he finds merely general views that he cannot apply to the individual case.[3] In his book, "Heart Disease," Paul D. White [4] made the following statement: "When myocardial infarction sufficiently serious to be clinically recognized occurs, the prognosis is always grave. . . ." More recently, however, Dr. White [5] has decried such prognostic generalizations with these comments: "In cases of cardiovascular disease, the statement of prognosis often ends with the word 'guarded' largely to play safe. Granted that we cannot foretell the future with any certainty, I feel sure nevertheless that we can do better than we have in the past, or are doing now, by approaching the subject more scientifically and seriously. We have more facts and knowledge on which to base our prognoses than we utilize; we should call more than we do on the laws of chance in both our written opinions . . . and our discussion of the prognosis of any individual case with the patient himself, with his family, or with fellow physicians."

FACTORS IN PROGNOSIS

Many of the factors that influence the prognosis adversely in acute myocardial infarction are well known. Careful investigations testify to the seriousness of any one of many signs associated with the acute attack: (1) old age, (2) a history of previous attacks of myocardial infarction, (3) intractable pain accompanying the acute episode, (4) severe or persistent shock, (5) congestive heart failure, (6) high fever and leukocytosis, (7) cardiac arrhythmias such as auricular fibrillation or flutter, ventricular tachycardia or intraventricular block, and (8) the occurrence of embolization. Statistically the presence of any one of these factors increases the mortality rate from the average of 40 or 50% to the range of 60 to 80% or higher.

While such information is of value in estimating prognosis in the more severe attacks of the disease, by what means shall one judge the chances for survival in patients sustaining clinically mild attacks? Smith [6] has reported that at the Henry Ford Hospital mortality from first infarctions has been 21.7%. In an earlier report, however, Master [1] recorded the mortality rate in a series of first attacks treated at home as 5.5%. Baer and associates [7] reported the death rate to be 8.5% in a similar series of 212 cases. Friedberg,[8] in his textbook, "Diseases of the Heart," has estimated that "as milder cases are identified, the mortality rate from first attacks will not greatly exceed 10%." Inasmuch as all first attacks of acute myocardial infarction are not of uniform severity, the death rate among those presenting a benign symptomatology should be considerably below these recorded figures. Since, as will be shown, cases falling into this category comprise almost half of all cases of acute myocardial infarction, the importance of ascertaining mortality and morbidity rates for this group appears obvious. Certainly the average mortality rate of 40 to 50%, or the mortality rate for first attacks, 5.5 to 21.7%, would not appear applicable to this selected low risk group. In order to determine the chances for survival and the risk of "sudden unexpected death" in such cases we have studied the clinical course and outcome of attacks in a large number of patients during their period of hospitalization.

COMPOSITION OF SAMPLE

An analysis of 1,318 consecutive admissions for acute myocardial infarction to three New York hospitals was made. In every instance the clinical diagnosis of acute infarction was documented by one or more electrocardiograms. The age range for the entire series was 30 to 88 years, with a mean age of 56.7 years. All the patients in this study were treated by conservative means without the use of anticoagulants. Of the total, more than 60% were admitted within 24 hours of the onset of their attack and more than 80% within 48 hours. The 611 patients who qualified as "good risks" presented none of the following poor prognostic criteria on the day of admission to the hospital: (1) previous myocardial infarction, (2) intractable pain, (3) extreme degree or persistence of shock, (4) significant enlargement of the heart, (5) gallop rhythm, (6) congestive heart failure, (7) auricular fibrillation or flutter, ventricular tachycardia, or intraventricular block, and (8) diabetic acidosis, marked obesity, previous pulmonary embolism, varicosities in the lower extremities, thrombophlebitis (past or present), or other states predisposing to thrombosis.

TABLE 1.—*Mortality Rate and Incidence of Thromboembolic Complications*

	No. of Cases	Mortality		Thrombo-embolism	
		No.	%	No.	%
Total	1,318	445	33.8	89	6.8
"Good risk"	611	21	3.4	8	1.3
"Poor risk"	707	424	60.0	81	11.5

RESULTS

"Good Risk" Patients.—Of the total group of 1,318 patients, it was found that 611, or 46.4%, qualified as having sustained an "uncomplicated" first attack (table 1). The death rate during the period of hospitalization among these 611 "good risk" patients was found to be only 3.4%. Of the total of 21 fatalities in the latter group 10 occurred suddenly within the first 48 hours after admission, so that the mortality rate during the subsequent period of hospitalization, when 11 fatalities occurred, was only 1.8%. Thrombotic or thromboembolic complications occurred in only 1.3% of the "good risk" patients, and most of these were of a mild nature. An analysis of the causes of death among the "good risk" patients revealed that in a few of the 10 deaths within the first

---

[3] Mackenzie, J.: Diseases of the Heart, New York, Oxford University Press, 1913.

[4] White, P. D.: Heart Disease, New York, The Macmillan Company, 1944, p. 498.

[5] White, P. D.: Principles and Practice of Prognosis, with Particular Reference to Heart Disease, J. A. M. A. **153**: 75 (Sept. 12) 1953.

[6] Smith, F. J.; Keyes, J. W., and Denham, R. M.: Myocardial Infarction: A Study of the Acute Phase in 920 Patients, Am. J. M. Sc. **221**: 508, 1951.

[7] Baer, S.; Krasnoff, S. O., and Heine, W. I.: Criteria for the Use of Anticoagulants in Acute Myocardial Infarction, Pennsylvania M. J. **56**: 274, 1953.

[8] Friedberg, C. K.: Diseases of the Heart, Philadelphia, W. B. Saunders Company, 1949, p. 476.

48 hours after hospitalization there was sudden deterioration of the clinical picture with the onset of shock or congestive heart failure followed by a rapid death. Of those patients who died after 48 hours, three died suddenly from rupture of the left ventricle and one patient died shortly after the development of cerebral embolism. Five patients died of unknown causes; in these, recurrent myocardial infarction or thromboembolism was suspected. Two patients died of causes unrelated to the cardiovascular system.

Table 2.—*Mortality Rate According to Age and Severity of the Attack*

	Mortality, %	"Good Risk," %	"Poor Risk," %
All ages	33.8	3.4	60.0
Under 60	29.5	3.6	58.7
60 or over	40.3	3.2	61.4

"Poor Risk" Patients.—Of the total group of 1,318 patients, 53.6% presented poor prognostic signs on the day of their first examination on admission to the hospital. The death rate in this group was 60% and the incidence of thrombotic and thromboembolic complications 11.5% (table 1). Analysis of the death rate according to age groups showed an appreciably higher figure for those 60 years of age or older than for those under this age (table 2). Thus, the mortality rates were 40.3% and 29.5%, respectively. Comparison of the mortality rates of these two age groups within a framework of prognostic categories, however, failed to reveal that age exerts a significant influence on survival with attacks of similar severity. Consequently, the higher death rate in older groups is solely due to a higher incidence of serious attacks with advancing years (table 3) and not to a specific influence of age on the outcome of the individual case. Almost two-thirds of the patients 60 years of age or older were "poor risks" on admission to the hospital as compared to less than one-half of those under that age.

COMMENT

The high average mortality rate and incidence of nonfatal complications in acute myocardial infarction has created the erroneous impression that the immediate prognosis in this disease is always grave regardless of the mildness of the clinical picture. Until now there has been virtually no information available regarding the chances for survival in patients sustaining an "uncomplicated" first attack. More specifically, no statistics have been brought forth to date to indicate morbidity and mortality rates in the large segment of coronary patients in whom pain and, perhaps, mild shock are the only significant findings at the time of the first examination. Such information might be of value to the clinician who at present gives a "guarded" prognosis in all such cases even when convalescence is moderately advanced. Our analysis indicates that only 3.4% of the patients who sustained a first attack and presented a benign clinical picture at the time of admission died during the period of hospitalization. This mortality rate is less than that found in pneumococcic pneumonia under modern antibiotic therapy, in which the death rate is commonly recorded as 5%. Moreover, in the "good risk" group in our series, survival beyond the first 48 hours was associated with a subsequent mortality rate of only 1.8%.

From this evidence it would seem that physicians should adopt a more optimistic attitude with respect to the probability of recovery in all "good risk" patients. When such patients have survived the first two or three days there would appear to be even greater justification for such optimism. It should be remembered, however, that these results were obtained with conservative therapy during a three to six week period of bed rest. Consequently, while the basis for optimism appears clear, overconfidence and carelessness on the part of both physician and patient may lead to unfortunate results if unwarranted liberties are taken. It has been repeatedly stated that the most important factor influencing immediate mortality after acute coronary occlusion is the age of the patient. That there is a higher death rate from this disease in older age groups is well known, but this observation has given an erroneous concept concerning the influence of age on survival in the individual case. We have found that the higher death rate in older patients is directly due to the higher incidence of serious attacks in older groups (table 3). When cases of similar mildness or severity were compared, age alone was observed to exert no influence on immediate prognosis (table 2). Consequently, the favorable outlook for recovery in "good risk" patients applies to old age groups as well as to young.

The fact that almost half of the total number of deaths in the "good risk" group occurred within 48 hours of admission suggests a danger, even in these cases, from the psychic and physical trauma attending their removal to the hospital. The practice of administering anticoagulants in all cases of acute myocardial infarction requires almost immediate admission to the hospital and thereby subjects the patient to a risk that is too frequently overlooked. In previous studies[9] we have emphasized that anticoagulants are unlikely to influence the outcome in the "uncomplicated" first attack because of the low incidence of thromboembolism, on the one hand, and the small, though significant, risk of hemorrhage induced by therapy, on the other. In the more serious cases of the disease, however, it does appear likely that anticoagulant therapy exerts a favorable influence on both the death rate and the thromboembolic complication rate.

Table 3.—*Analysis According to Age and Severity of Attack*

		"Good Risk"		"Poor Risk"	
	Total	No.	%	No.	%
All ages	1,318	611	46.4	707	53.6
Under 60	794	421	53.0	373	47.0
60 and over	524	190	36.3	334	63.7

---

[9] Russek, H. I.; Zohman, B. L.; Doerner, A. A., and White, L. G.: Indications for Bishydroxycoumarin (Dicumarol) in Acute Myocardial Infarction, J. A. M. A. 145:390 (Feb. 10) 1951. Russek, H. I.; Zohman, B. L.; Doerner, A. A.; Russek, A. S., and White, L. G.: Indications for Bishydroxycoumarin (Dicumarol) in Acute Myocardial Infarction, C lation 5:707, 1952. Russek, H. I., and Zohman, B. L.: An of Anticoagulant Therapy in the Treatment of Acute M tion, Am. Heart J. 43:871, 1952. Zohman, B. L., and The Present Status of Anticoagulant Therapy in Acute tion, Quart. Rev. Med. 9:1, 1952. Russek, H. I., Prognosis in the "Uncomplicated" First Attack Infarction, Am. J. M. Sc. 224:496, 1952. B. L.: Selection of Patients for Anticoagul cardial Infarction, ibid., to be published.

SUMMARY AND CONCLUSIONS

An analysis was made of 1,318 consecutive cases of acute myocardial infarction in which the patients were classified as "good risk" or "poor risk" on the basis of certain prognostic criteria on the day of admission to the hospital. It was found that the mortality rate for 611 "good risk" patients during the period of hospitalization was 3.4%, the incidence of thromboembolism 1.3%. In the patients surviving 48 hours, the subsequent death rate was 1.8 per 100 patients. The "good risk" group comprised almost half of the total number of patients in the series. The death rate in this large number of patients was less than that commonly recorded for pneumococcic pneumonia in modern literature. The mortality rate among 707 "poor risk" patients was 60%; the incidence of thromboembolism, 11.5%. Anticoagulant therapy would appear to confer no benefit in "good risk" patients because of the low incidence of thromboembolism in this group and the dangers attendant upon its use. In the more serious cases, however, anticoagulants do appear to exert a favorable influence on both morbidity and mortality statistics. The risk in too early or unnecessary removal of the patient to the hospital should be recognized, since the initial 48 hours following the attack represents a critical period in all cases. Contrary to interpretations derived from crude statistics, the age of the patient does not influence the immediate prognosis with any attack of known severity. The clinical appearance of the patient at the onset of the attack is the best index to the future course of his illness. This evidence justifies a more optimistic attitude than has usually been taken by physician and patient in all "good risk" cases, particularly when survival has extended beyond the first few days of the attack. Overconfidence and carelessness, however, are not warranted as a result of these findings.

176 Hart Blvd. (Dr. Russek).

Chronic Pulmonary Diseases.—Probably no other vital organ is heir to as great a variety of morbid processes as is the lung. This peculiarity and vulnerability is related to its anatomic location, structure and physiologic characteristics. Although the lungs must be considered as "internal" organs surrounded by the thoracic cage, the diaphragm, cervical and mediastinal structures, they are directly exposed to the exterior and to numerous noxious agents which pollute the air; and although relatively far removed from many vital organs, their peculiar interposition with regard to the greater and lesser circulatory systems makes them vulnerable to many morbid conditions primarily involving other vital organs. For example: the lungs are a common site of metastatic neoplasms; they constitute a natural setting for fat and air emboli and infarction; they serve as a "receptacle" and favorable culture medium for a wide variety of aerobic and anaerobic bacteria, microbacteria and fungi, which may enter the lungs either directly through the air passages, indirectly by way of the blood and lymphatic systems, or as a result of progression of contiguous pathological processes from neighboring structures. As a consequence of the predilection of the lungs for morbid processes and as a frequent participant in systemic disease, it is readily understood why differential diagnosis and adequate understanding of chronic pulmonary disease is dependent upon some insight and knowledge of most morbid processes which affect the body.—H. McL. Riggins, M.D., The Differential Diagnosis of Chronic Pulmonary Disease. *The Medical Clinics of North America*, May, 1954.

CLINICAL NOTES

CHEST WALL STABILIZATION BY SOFT TISSUE TRACTION

A NEW METHOD

Theodore R. Hudson, M.D.
Robert T. McElvenny, M.D.
and
Jerome R. Head, M.D., Chicago

Human nature being what it is, the rapid increase in the total number of automobiles on the highways and the recent trend toward senseless speed through fantastic increases in horsepower can add up to but one thing, more serious injuries caused by motor car accidents. Since 20 to 25% of the deaths from automobile accidents are due to chest injuries, an increasing number of serious thoracic injuries is to be expected. One of the most pressing problems in the treatment of stove-in thorax is stabilization of the chest wall. Anterior stove-in chest, or the so-called steering wheel injury, presents a particularly difficult problem when the area mobilized is extensive. The paradoxical respiration and the inefficiency of coughing caused by such injuries often threaten life. Normally with each inspiratory effort the anterior ribs rise and the diaphragm descends, enlarging the thoracic cage and drawing air into the lungs. When a substantial area of chest wall is softened by rib fractures, this region tends to sink inward on inspiration and to move outward on expiration. As this occurs, the mediastinum shifts from side to side, comprising first one lung and then the other. Part of the respiratory effort is thus expended in "breathing" from one lung into the other. The same mechanism impairs coughing. The abnormal mobility of the softened area prevents the building up of an effective intrapulmonary pressure for efficient coughing. This leads to retention of pulmonary secretions. All of these factors lead directly and quickly to anoxia. A vicious circle is set up as desperately ill patients struggle for increasing amounts of air only to find the situation made worse by their own efforts. The interruption of this cycle can best be accomplished by stabilization of the chest wall.

The conventional treatment by adhesive tape strapping is satisfactory for such injuries when they are minor. In cases in which the area softened is at all extensive, strapping is not likely to be effective. The use of adhesive tape as a first aid measure is, of course, acceptable. Methods in which traction is placed on ribs by means of clips, tongs, wires, and other devices have been used for years and are well known. In many cases the use of these methods will be satisfactory. In steering wheel injuries, however, the ribs are likely to be so fragmented that it is impossible to use this type of traction. Furthermore, the necessary surgical manipulations in the vicinity of the pleura often result in puncture of the lung and a resultant

---

From the departments of surgery, Northwestern University Medical School and Wesley Memorial Hospital.

Read before the Chicago Surgical Society, Jan. 8, 1954.

pneumothorax. If this is added accidentally when it did not already exist, a bad situation is made worse.

The more pretentious method of stabilization by open surgical fixation has been reported but is not likely to be as good as it might seem. The thinness and fragility of the anterior rib segments mitigate against firm fixation by wiring, plating, or intramedullary pegging. Most of these patients are in such poor general condition, however, that a major surgical procedure is contraindicated. Two years ago, when confronted by such a problem in a patient having a steering wheel injury with extensive softening and severe paradoxical motion, we devised what we think to be a new method of chest wall stabilization by the use of soft tissue traction.

METHOD

While the patient is under local anesthesia, pins are inserted into the skin at one edge of the softened area. The pins are of stainless steel 9 in. (22.9 cm.) long and 3/32 in. (0.24 cm.) in diameter with a trocar point at one end. These are passed beneath the muscles but superficial to the ribs in a direction calculated to bring them out at the opposite edge of the softened area. Two or three such pins are usually sufficient (fig. 1). Appropriate sterile dressings are applied at each point of skin perforation, and a larger dressing secured by adhesive tape is applied to the general area. Spreader bows are placed on each pin. The chest wall can now be stabilized by holding up the spreader bows while attendants rig the frame for overhead traction. Ordinary traction bows can be used if spreader bows are not available; however, it is important to use the spreader type of traction bow to prevent bending of the pins in the soft tissue. For one patient in this series spreader bows were not available and a fair-sized hematoma developed, presumably due to bending of the pins. Once the overhead frame has been set up, weights are adjusted to pull on each spreader bow individually (fig. 2). The amount of weight used will be that which abolishes all paradoxical motion of the softened area. In our cases 7 lb. per pin was used. The patients were all adult males. It is likely that in children or small adults less weight would be required. With the chest wall thus stabilized, any other required treatment for the injured chest may be undertaken. An intercostal nerve block with procaine (Novocaine) hydrochloride may be performed to alleviate pain. Needle aspiration or closed intercostal drainage may be done if indicated for pneumothorax or hemathorax. Coughing again will be effective.

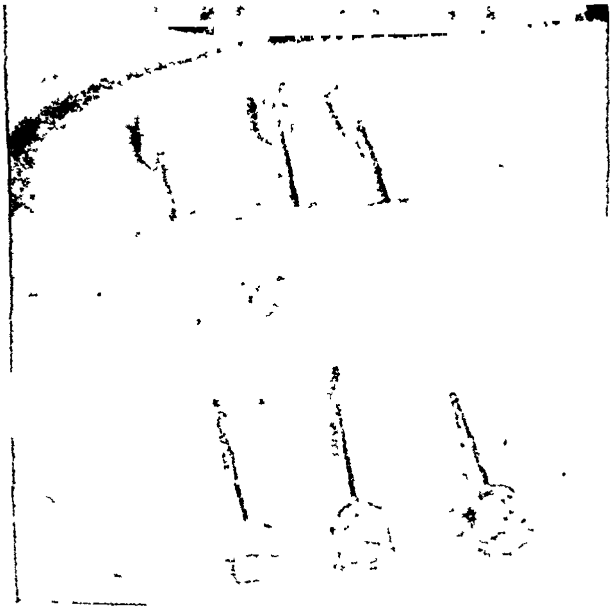


Fig 1—Pins in place just prior to removal. Note the absence of any evidence of tissue necrosis

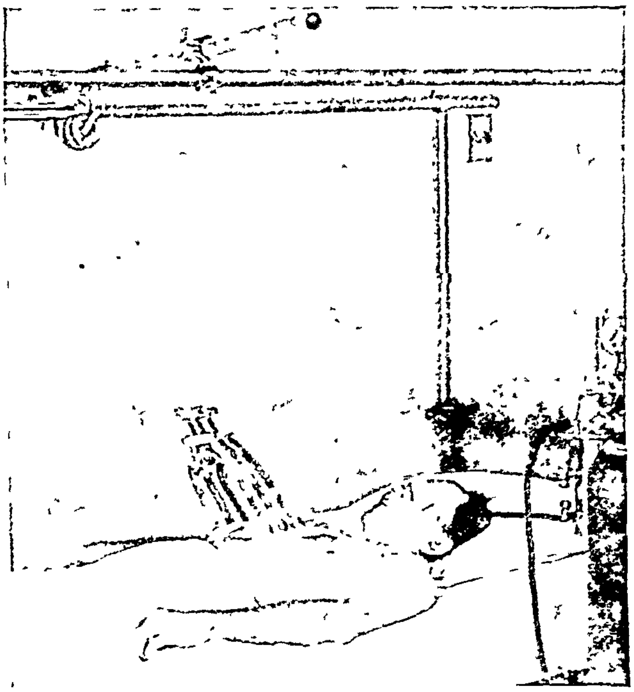


Fig 2—Traction applied to the pins by means of spreader bows

A daily check of the stability of the softened areas is carried out by temporarily slacking off the weights. As time passes some weight can be taken off if doing so does not permit paradoxical motion to reappear. In all of our cases it was possible to remove the weights on the seventh or eighth day. The pins are best left in place a day or two after removing all weights so that traction may be restarted if necessary. When removing the pins, the sharp ends are cut off with a heavy cutter close to the skin and the pins are pulled out from the side in which they were inserted. This minimizes the possibility of drawing bacteria through the tracts. A hematoma may form in the area, but in none of our patients has this proved a problem. There has been no infection. There has been no tendency to necrosis of soft tissue due to the traction, nor has the pull on the pins produced pain.

Four patients have been treated by this method. Two of these died, one of a brain injury and one of uncontrollable pulmonary edema plus acute renal failure. In both of the patients who died, the chest wall was well stabilized. The other two patients made complete recoveries and have no disabling after-effects due either to the injury or to the treatment.

A NEW DIAGNOSTIC PROCEDURE FOR CANCER OF THE LARYNX USING A RETRACTABLE THROAT BRUSH

J. Ernest Ayre, M.D., Miami, Fla.

The diagnosis of cancer of the larynx is dependent upon surgical biopsy from a target lesion recognizable by the otolaryngologist. Symptoms such as chronic hoarseness, cough, and hemoptysis are often present before final diagnosis for a variable period of time. A new method of collecting cells from the throat is presented here as a diagnostic aid to biopsy in visual lesions. It is proposed that clinical trials be made to determine the practicability of brush cytology as a screening method for early cancer. The common malignant lesion involving the throat is epidermoid carcinoma, the same type of neoplasm as is commonly encountered in the female uterine cervix. The widespread use of the cytological method of detection of cancer of the cervix has proved the extended duration of the preclinical carcinoma-in-situ stage. Direct cervical cell scraping yields diagnostic cells of carcinoma in situ with great accuracy during the period preceding the development of the ulcerating target lesion.[1] A recent report emphasizes the innocent appearance of lesions of the vocal cords proved by surgical biopsy to be carcinoma in situ.[2] Chronically inflamed, reddened patches on the vocal cords that appear innoce may harbor beginning carcinoma. An instrument h been developed to collect surface cells from the voc cords to permit preliminary cytological study and dia nosis of benign and malignant growths. Malignant cel brushings should be confirmed by histological study pri to therapy.

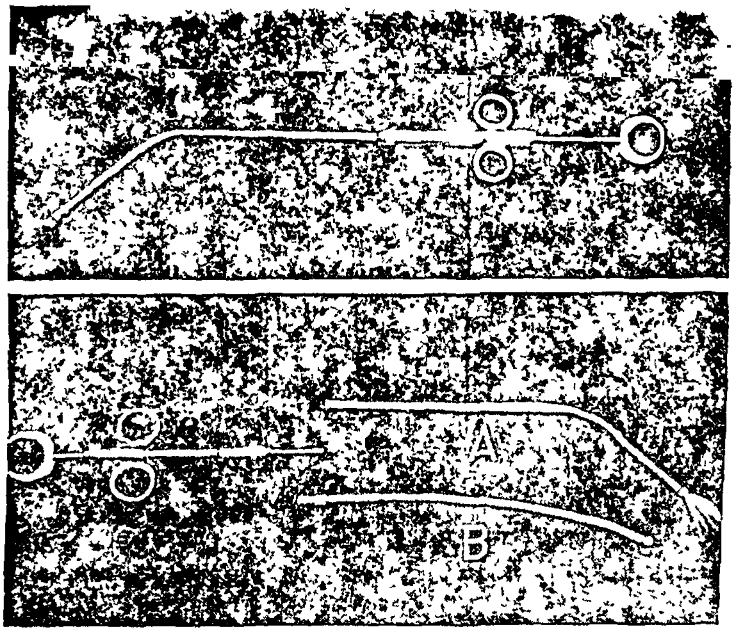


Fig. 1.—Top, throat brush with bristles retracted into metal tip. Bottom, metal tip unscrewed from handle. *A*, bristles extruding from metal tip; *B*, alternative tube of flexible polyethylene used in directing brush toward pharyngeal target lesions.

TECHNIQUES AND METHODS

The recent introduction of brush cytology into the fiel of gastric cancer diagnosis[3] has stimulated the development of new methods that may permit the application c brush cytology to previously inaccessible tissues. The r tractable throat brush (Ayre) described here has bee designed in such a way as to enable the rapid brushin of the vocal cords by a retractable brush that rotat through 360 degrees and so collects a rich concentr tion of cells and secretion (fig. 1). Rotation of the brus while in contact with the tissues permits the sweeping c a better tissue area, thus increasing the effective ran of the diagnosis procedure. The curvature of the met tube follows the natural curve of the tongue and po terior pharynx. Simple design permits the use of th brush under direct visualization by the otolaryngologis Early tests suggest that the instrument may prove usef for blind brush surveys of the vocal cord area for d tection or screening. While local anesthesia of the thro may at times be indicated the brush procedure is so rapi that the irritation resulting from its use is of short dura tion and is well tolerated without anesthesia.

PRINCIPLE OF BRUSH CYTOLOGY

It has been observed during experimentation with various types of bristles that natural boar's bristles exert some attraction for epithelial cells and mucus. The boar's bristles are flagged at the end and possibly this helps to ensnare cells that adhere to the bristles. *Brushing removes cells by gentle scraping action; and selectively larger* numbers of malignant cells will be shed from neoplasms than from normal epithelium where there is a greater resilience. This is attributed to the low calcium content of the malignant cell as contrasted to the normal cell.[4] As a result of low calcium content the intercellular cement breaks down and there is a greater tendency for malignant cells to break apart.[5] Before withdrawing the instrument the brush is retracted into the sleeve that protects the cell sample. The cells are then transferred promptly to a glass slide (fig. 2).

CYTOLOGY OF THROAT

Cell-brushings from the vocal cords reveal large numbers of squamous epithelial cells whose morphological pattern may be normal or may be of inflammatory or malignant type. In the presence of carcinoma rich concentrations of malignant cells frequently present conclusive diagnostic evidence that may be confirmed by histological studies. Often glandular cells will be found on the brush samples; this is apparently due to *shedding* of cells from adenoid patches of the pharynx.

From the Cancer Institute at Miami, Cancer Research and Cytology Center.

Read at the Third Annual Seminar and Conference on Cancer Cytology, Miami, Fla., April 23, 1954.

These studies have been assisted by a grant from the Public Health Foundation for Cancer and Blood Pressure Research, Inc.

Dr. Nathaniel Levin of Miami assisted in the development of the technique reported on in this paper.

[1] Ayre, J. E.: Cancer Cytology of the Uterus: Introducing a Concept of Cervical Cell Pathology, New York, Grune & Stratton, 1951.

[2] Miller, A. H., and Fisher, H. R.: Carcinoma-in-Situ of the Larynx, Ann. Otol. Rhin. & Laryng. 62: 358-370 (June) 1953.

[3] Ayre, J. E., and Oren, B. G.: A New Rapid Method for Stomach-Cancer Diagnosis: The Gastric Brush, Cancer 6: 1177-1181 (Nov.) 1953.

RESULTS

In a preliminary test series the throat cytology was studied in 142 patients. Sixteen of these showed malignant cell-brushings and results in nine cases were classed as "suspicious." In 14 histological follow-ups, 10 of the positive cases were confirmed, as were 2 of the suspicious. A biopsy was performed in one suspicious case, but no malignancy found, and one case was reported as false negative diagnosis.

COMMENT

The need for a screening method for early cancer of the throat has been emphasized by recent publicity on the importance of ruling out malignancy in heavy smokers suffering from throat irritation. It is suggested that a simple technique such as that described here may play a useful role in annual cancer examinations and in examination of patients suffering prolonged hoarseness or throat irritation. Such persons should be observed closely, and detection procedures that may play a useful role in the recognition of malignancy at an earlier and more favorable stage would seem to be worth while. If the examining physician fails to check the cytology of an irritated throat the patient may not return to the doctor's office for a long period during which an early lesion may progress to an intractable stage of malignancy. The seriousness of the problem of cancer of the throat would seem to justify every effort that may lead to earlier diagnosis of malignancy.

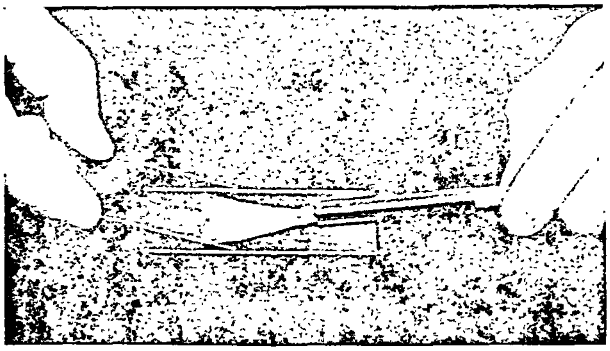


Fig. 2.—Transfer of cell sample from bristles to glass slide. By gentle pressure and traction cellular material is expressed from brush onto underlying glass slide, concentrating cellular material and facilitating microscopic search for abnormal cells.

1155 N.W. 14th St.

4. Chambers, R., and Zweifach, B. W.: Intercellular Cement and Capillary Permeability, Physiol. Rev. **27**: 436-463 (July) 1947.

5. Coman, D. R.: Mechanism of Invasiveness of Cancer, Science **105**: 347-348 (April 4) 1947. Carruthers, C., and Suntzeff, V.: Calcium Copper, and Zinc in Epidermal Carcinogenesis of Mouse and Man, Cancer Res. **6**: 296-297 (June) 1946.

Contract Practice.—Contract practice as applied to medicine means the practice of medicine under an agreement between a physician or a group of physicians, as principals or agents, and a corporation, organization, political subdivision or individual, whereby partial or full medical services are provided for a group or class of individuals on the basis of a fee schedule, or for a salary or for a fixed rate per capita.

Contract practice per se is not unethical. Contract practice is unethical if it permits of features or conditions that are declared unethical in these Principles of Medical Ethics or if the contract or any of its provisions causes deterioration of the quality of the medical services rendered.—*Principles of Medical Ethics of the American Medical Association,* chapter 7, section 3, June, 1954.

COUNCIL ON FOODS AND NUTRITION

ACCEPTED FOODS

The following products have been accepted as conforming to the rules of the Council.

James R. Wilson, M.D., *Secretary.*

Mead Johnson and Company, Evansville, Ind.

Powdered Lactum.

Ingredients: Whole milk and Dextri-Maltose with added vitamin D (calciferol).

Analysis (submitted by manufacturer).—Total solids 97.5%, moisture 2.5%, ash 4.5%, fat 19.5%, protein (N × 6.38) 19.0%, carbohydrate: from milk 26.3%, from added Dextri-Maltose 28.2%.

Vitamins and Minerals	Per 100 Gm.
Vitamin D	500 U. S. P. units per reconstituted quart
Calcium	670 mg.
Phosphorus	500 mg.
Iron	1 mg.

Calories.—4.66 per gram; 133 per ounce by weight.

Use.—In infant feeding.

Liquid Sobee.

Ingredients: Soya flour, Dextri-Maltose, sucrose, soya oil, coconut oil, calcium carbonate, calcium phosphate, sodium chloride, vitamin A palmitate, calciferol, chondrus extract, and water.

Analysis (submitted by manufacturer)

	Undiluted, % (w/v)	Diluted (1:1), % (w/v)
Water	71.5	85.8
Protein	6.5	3.2
Fat	5.2	2.6
Carbohydrate	15.5	7.7
Crude fiber	0.3	0.2
Ash	1.0	0.5

Minerals (mg. per 100 ml.)	Undiluted	Diluted (1:1)
Calcium	210	100
Phosphorus	100	50
Potassium	270	130
Sodium	110	50
Chlorine	100	50
Magnesium	40	20
Iron	1	0.5

Vitamins (mcg. per 100 ml.)	Undiluted	Diluted (1:1)
Thiamine	40	20
Riboflavin	60	30
Niacinamide	412	200
Pyridoxine	92	45
Pantothenic acid	248	125
Inositol	20 mg.	10 mg.
Biotin	9.2	4.6
Choline	42 mg.	21 mg.
Vitamin A	540 I. U.	270 I. U.
Vitamin D	80 I. U.	40 I. U.

Calories.—40 per fluid ounce; 20 per ounce when diluted with an equal amount of water.

Use.—In feeding of infants allergic to milk.

Webster-Thomas Company, Boston.

Matchless Brand Dietetic Pack Unpeeled Halves Apricots.

Ingredients: Apricots processed and packed in water without any added sugar or salt.

Analysis (submitted by distributor).—Total solids 8.2%, moisture 91.8%, ash 0.4%, fat (ether extract) 0.1%, protein (N × 6.25) 0.5%, crude fiber 0.3%, carbohydrates (by difference) 6.9%, ascorbic acid 3.9 mg./100 gm., sodium 3.36 mg./100 gm.

Calories.—0.31 per gram; 8.8 per ounce.

Use.—In low calory, low sodium, and other therapeutic diets.

THE JOURNAL
OF THE AMERICAN MEDICAL ASSOCIATION
535 N. DEARBORN ST. . . . . CHICAGO 10, ILL.
Editor . . . . AUSTIN SMITH, M.D.
Associate Editor . . . . JOHNSON F. HAMMOND, M.D.
Editor for Medical Literature Abstracts . GEORGE HALPERIN, M.D.
Assistant Editor . . . . WAYNE G. BRANDSTADT, M.D.

Subscription price . . Fifteen dollars per annum in advance
Cable Address . . . . "Medic, Chicago"

BLOOD FRACTIONATION

The problem of preserving blood is greatly simplified when it is reduced to the preservation of its individual components. It has been estimated that the average adult body contains about 5 liters of blood, of which 2.75 liters is plasma, 2.22 liters is erythrocytes, 0.02 liter is platelets, and 0.01 liter is leukocytes.[1] The blood fractionator developed under the direction of the late Dr. E. J. Cohn at Harvard University is an ingenious device which provides a continuous closed mechanical system for taking blood from a vein, separating it into the elements named, and packaging the fractions in sterile plastic containers. The apparatus is housed in a portable cabinet.

In order to prevent coagulation, calcium must be removed from the blood without delay. This is accomplished by passage of the blood through an exchange resin which gives up sodium and takes up calcium without damaging the cells. The resin beads also hold back the platelets. Because blood adheres to glass and rubber and because this damages the cellular elements, all tubing and containers are composed of a nonwettable plastic material. Damage to cells is further prevented by coating interior metallic surfaces with silicone and the interior of the intravenous needle with a nonwettable substance. To reduce chemical changes to a minimum the blood is cooled to near freezing within a few seconds after it is drawn. It then passes through a centrifuge. The apparatus works so swiftly that when the attendant removes the needle from the donor's vein the erythrocytes are in the upper chamber of the centrifuge, the leukocytes are in the lower chamber, and the plasma is in a plastic container. The centrifuge is then stopped, and the erythrocytes and leukocytes fall into their separate containers. The platelets are then washed out of the ion exchange resin and stored in a gelatin-containing medium. This medium keeps the individual platelets from impinging on each other and thereby makes it possible to preserve their clot-promoting activity for several months. A similar method has been tried on the leukocytes, but as yet no method of preserving them has been found. The apparatus does, however, provide a means of collecting these cells in quantity so that they can be used for further study.

The plasma thus collected can be further fractionated in the laboratory as desired, there being at least 26 identifiable substances present in varying amounts. These range from serum albumin, which accounts for about 52% of the plasma, to traces of various enzymes. If the plasma is treated with a minute quantity of a zinc compound and centrifuged, the gamma globulin and fibrinogen are precipitated out. These are then separated by a simple ion exchange process. Gamma globulin is relatively stable either in solution or in the dried form. The virus of infectious hepatitis disappears from the solution on storage but not from the dried form. Purified fibrinogen is very stable when dried and with thrombin may be used to control surgical or postpartum hemorrhage. Plasma from which the gamma globulin and fibrinogen have thus been removed is called SPPS (stable plasma protein solution) and consists mostly of serum albumin. So far as is known viruses do not remain in this fraction, but as a matter of precaution it is pasteurized at 140 F for 10 hours. This may then be stored without refrigeration for years and used in any situation in which plasma is indicated.

This new apparatus achieves maximal economy in the use of blood by separating the blood into its various constituents, thus permitting further study of the special role of each. The fraction that is needed for a specific condition may then be selected. When each fraction is stored under conditions optimal for it, the period of effective storage can be greatly prolonged and the risk of the transmission of pathogenic viruses virtually removed. The apparatus can also be used to salvage SPPS and erythrocytes from banked blood that has been stored for three weeks. Another possible use of the apparatus is for collection of gamma globulin from donors who are hyperimmune to poliomyelitis. After removal of the gamma globulin, the rest of their blood would be reinjected. Such a donor would lose little vital fluid and could donate globulin as often as once a week.

ANTENATAL Rh ANTIBODY TESTS

The purpose of antenatal antibody tests is to determine before delivery which Rh-negative expectant mothers have become sensitized, so that Rh-negative blood of a compatible A-B-O group can be made available to treat the baby promptly after birth, when necessary. In this way, lives of erythroblastotic babies can be saved and among affected babies who survive neurological sequelae can be prevented. Every Rh-negative multipara who has had a previous Rh-positive baby is a possible candidate for Rh sensitization, which may develop at any time during a pregnancy. If Rh sensitization does develop, it is probable that the baby will be erythroblastotic and may require treatment by exchange transfusion.

The first Rh antibody test should be done as soon as the patient becomes pregnant, to determine whether the patient is already sensitized at the beginning of the pregnancy and, if she is, what the level of the antibody titer is. Since antibody titrations have a large degree of experimental error, if the patient is sensitized, the titrations should be done several times and the results averaged, in order that the initial titer values obtained may be as accurate as possible.

If the mother is sensitized, moreover, an attempt should be made to determine whether the husband is homozygous or heterozygous for the **Rh_0** factor. This often can be determined by typing the bloods of any living children and the parents of the husband if they are available. If any child of an Rh-positive person or either of his parents is Rh negative, then the person must be heterozygous for the **Rh$_0$** factor. By this method it is never possible to establish with certainty that a person is homozygous, though if there are very many children in a family all of whom are Rh positive it becomes highly probable that the parent in question is homozygous. When neither children nor parents are available for Rh testing, it may nevertheless be possible to infer the probable genotype of a person by determining his complete Rh-Hr type; for example, persons of type Rh$_1$rh are generally heterozygous (genotype R^1r) for the **Rh$_0$** factor, though they may occasionally prove to be homozygous (genotype R^1R^0). On the other hand, persons of type Rh$_1$Rh$_1$ or type Rh$_1$Rh$_2$ are almost always homozygous for the **Rh$_0$** factor.

---

[1] Surgenor, D. M.: Blood, Scient. Am. **190**: 54-62 (Feb.) 1954.

If the expectant Rh-negative mother is sensitized to the **Rh$_0$** factor, while her husband is homozygous for the **Rh$_0$** factor, there is hardly any doubt that the fetus in utero is erythroblastotic, and the severity of the manifestations is correlated with the height of the maternal Rh antibody titer, although exceptions to this rule are not infrequent. For example, if the antibody titer is extremely high, a stillbirth is almost inevitable. With antibodies of very low titer, on the other hand, a mildly affected baby or even a subclinical case is to be expected, and full recovery generally results without treatment. With intermediate titers typical erythroblastotic babies result, and here the outcome depends in a large degree on the management of the case. If the husband is heterozygous for the **Rh$_0$** factor, there is a 50% chance that the expected baby may be Rh negative, in which case the maternal Rh antibodies cannot harm the baby. It is in this type of case that periodic antenatal Rh antibody tests are most valuable. If a significant rise in titer occurs during the pregnancy, this is definite proof that the fetus in utero is Rh positive, and an erythroblastotic baby is to be expected, even though the father may be heterozygous. Failure of the antibody titer to rise during the pregnancy leaves open the question whether the baby is Rh positive or Rh negative.

The frequency with which antenatal Rh antibody tests should be done varies with the nature of the case, and there is no fixed regimen. In fact, there is wide latitude among the procedures adopted by different workers. After the initial test done at the beginning of the pregnancy, it is recommended that the antibody tests be done again at the sixth month. Thereafter, in nonsensitized expectant mothers the test should be repeated at four to six week intervals until term, while in sensitized expectant mothers the tests should be done more frequently, as often as once a week during the last month of the pregnancy.

With regard to the question of early delivery, this, if it is carried out at all, should be reserved for cases in which the expected baby will almost surely be erythroblastotic. Delivery should be accomplished from below by induction of labor, preferably about two weeks before term. Too early delivery is to be avoided, because premature erythroblastotic babies appear to be particularly susceptible to nuclear damage. On the other hand, postmaturity is to be avoided, since excessively large babies are subject to birth trauma, and this also prolongs unnecessarily the period of exposure to the Rh antibodies. Erythroblastotic babies do not appear to stand cesarean section well, so that this operation should be reserved only for those cases in which an obstetric indication makes the operation imperative.

HANDLING OF RADIOACTIVE CADAVERS

Many patients are given tracer doses of radioactive isotopes as a diagnostic procedure. In the event of an accidental death such a patient constitutes no radiological hazard because the tracer doses used are small. Radioactive gold (Au^{198}) and radioactive iodine (I^{131}) are, however, used therapeutically. This is done only in a hospital, and the hospital is required to have a radiation safety officer. No patient receiving isotopes should be discharged from the hospital until his radioactivity is down to 30 mc. If such a patient dies suddenly after leaving the hospital, there is no radiological hazard in performing an autopsy or embalming the body. The maximum dose of Au^{198} or I^{131} is 150 mc., and although these isotopes are not given to moribund patients death may occur unexpectedly within two weeks after such a dose. In such a case the physician pronouncing the patient dead must attach copies of a warning form to the death certificate and to the outside of the clinical record. These must be completed before the body is turned over to the undertaker. The hazard to a pathologist performing an autopsy on such a patient depends on how much time has elapsed since the last dose of the isotope, the size of the dose, and which isotope was given.

With these data, which should be readily available on the clinical record, the pathologist may estimate the level of radioactivity of the body by consulting a table in a handbook prepared by the Bureau of Standards.[1] For convenience this table shows in italics the levels for which no precautions are necessary. Should the level appear to be unsafe (5 mc. or more), the radiation safety officer should be consulted before autopsy is performed. Such an autopsy should never be performed without gloves, preferably heavy rubber gloves with gauntlet tops. If the gloves are torn during the autopsy they must be removed, placed in a special container for disposition by the radiation safety officer, and the operator must wash his hands in a large quantity of running water. If the pathologist has incurred a minor wound he may put on fresh gloves and proceed, but, if the wound is more severe, an assistant must carry on for him.

If the level of radioactivity in the body is high, the radiation safety officer must prescribe a time limit for any one pathologist to work on the body and assistants must be used in relay to complete the autopsy. Organs from such a body treated with Au^{198} should be refrigerated or fixed and stored for several days before processing for microscopic examination. If the body is highly radioactive, it should be embalmed in the hospital morgue rather than at an undertaking establishment. In that way the radiation safety officer can prescribe and supervise the precautionary measures to be taken.

---

1. Safe Handling of Cadavers Containing Radioisotopes, U. S. Department of Commerce, National Bureau of Standards, Handbook no 56, 1953.

MEDICAL NEWS

ARKANSAS

Special Meeting of House of Delegates.—On Oct. 31, for the second time in its history, the Arkansas Medical Society will hold a special session of its house of delegates and the membership at large. The meeting will be held in Little Rock for the purpose of reviewing and discussing national and state legislation.

CALIFORNIA

Meeting on General Practice.—The California Academy of General Practice will hold its scientific assembly Oct. 24 to 27 at the Hotel Statler, Los Angeles. On Sunday at 2 p. m. Dr. Carlo S. Scuderi, Chicago, will present the Ivan C. Heron lecture, "Common Fracture Problems of the Lower Extremities," under a Wyeth, Inc., grant. At 4 p. m. Dr. Walter C. Alvarez, Chicago, will deliver the Stanley R. Truman lecture, "Unrecognized Psychotic Conditions," under a similar grant. The Monday sessions will open with "Care of the Infant for the First Six Months" by Dr. Arild E. Hansen, Galveston, Texas (presented under a Lederle grant). Dr. Louis P. Gambee, Portland, Ore., will consider "The Sequelae of Silent Gallstones" at 11:30 a. m. and "Gastrointestinal Diverticula" at 1:30 p. m. The Tuesday sessions will be opened by Dr. Robert B. Greenblatt, Augusta, Ga., whose topic will be "Uses and Abuses of Endocrine Therapy." Tuesday afternoon the following presentations will be made:

Medical Management of Arthritis, W. Paul Holbrook, Tucson, Ariz.
Vascular Hypertensive States, Hans H. Hecht, Salt Lake City (presented under a Lederle grant).
Diagnosis of Accessible Cancer, Danely P. Slaughter, Chicago (presented under an American Cancer Society, California division, grant).

A dinner party is scheduled for 7 p. m. Tuesday. The sessions will end with presentation on Wednesday at 11 a. m. of "Newer Uses in Antibiotic Therapy" by Dr. William M. Kirby, Seattle.

CONNECTICUT

Scholarships for Medical Students.—The Connecticut State Medical Society offers a number of scholarships of $500 each to students who are in their final year in an approved medical school in the United States or Canada and whose homes are in the state of Connecticut. Information concerning these scholarships and application forms, which must be submitted before Nov. 15, may be obtained from Dr. Creighton Barker, Executive Secretary, Connecticut State Medical Society, 160 St. Ronan St., New Haven.

Personal.—Dr. Frederick C. Redlich, professor of psychiatry and chairman of the department of psychiatry at Yale University School of Medicine, New Haven, has gone to Europe and Israel, under the auspices of the Social Research Foundation and the foundation's Fund for Research in Psychiatry, on an inspection trip of psychiatric research in progress. He will visit psychiatric institutions in Spain, Italy, Austria, Germany, Switzerland, Holland, Great Britain, and Israel and, as a consultant to the U. S. Army, will visit military installations in Austria and Germany.——Dr. Stevens J. Martin, director, department of anesthesiology at St. Francis Hospital, Hartford, and president, American Society of Anesthesiologists, was guest lecturer at the second Latin American Congress of Anesthesiologists, which met jointly with the Brazilian Society of Anesthesiologists in São Paulo, Brazil, Sept. 12 to 18. Dr. Martin gave a paper and demonstration concerning "Pediatric Anesthesia." He also presented other discussions in Lima, Peru, and Rio de Janeiro, Brazil.

FLORIDA

Society News.—The Heart Association of Greater Miami will have as speaker, Oct. 28, 8:15 p. m. in Memorial Hall, Jackson Memorial Hospital, Miami, Dr. Carl J. Wiggers, Cleveland, who will lecture on a cardiovascular topic.

Appoint Director of Blood Bank.—Capt. Lloyd R. Newhouser, U. S. N. (MC), retired, has been appointed director of the Blood Bank and associate director of the Medical Research Foundation of Dade County. Captain Newhouser, who was retired from the Navy for physical disability on Sept. 1, planned and put into operation the entire whole-blood program in the Pacific war area during World War II, for which service he was awarded the Legion of Merit.

GEORGIA

Pediatricians Meet in Atlanta.—The 22nd annual scientific meeting of the Georgia Pediatric Society will be held Oct. 28 at the Mayfair Club, 1450 Spring St., N. W., Atlanta. During the afternoon session, starting at 2 p. m., "New Developments in Immunization" will be discussed by Dr. Margaret H. Smith, associate professor of microbiology, Tulane University of Louisiana School of Medicine, New Orleans; "Current Status of Antibiotics in Pediatric Practice" by Dr. Benjamin M. Kagan, associate professor of pediatrics, Northwestern University Medical School, Chicago; and "The Clinical Significance of the Newer Knowledge of the Blood Proteins" by Dr. Charles A. Janeway, professor of pediatrics, Harvard Medical School, Boston. At the evening session, 7:30 p. m., Dr. Janeway will present "The Syndrome of Abnormal Susceptibility to Infection with Particular Reference to Staphylococcus Aureus"; Dr. Kagan, "Recent Advances in Infant Feeding"; and Dr. Smith, "Diseases of Domestic Animals in Relation to Children."

ILLINOIS

General Practice Meeting in Chicago.—The Illinois Academy of General Practice will hold its annual scientific assembly at the Sheraton Hotel, Chicago, Oct. 26 to 28. Dr. Pliny R. Blodgett, Chicago Heights, president, will serve as moderator for the round-table luncheon Wednesday noon, and Dr. Dewey M. Roberts, Alton, president-elect, as moderator for the round-table luncheon Thursday. Dr. William B. Hildebrand, Menasha, Wis., president, American Academy of General Practice, will address the annual banquet Wednesday, 7:30 p. m., when his topic will be "A Look Ahead." Dr. George A. Hellmuth, Milwaukee, will discuss "Emergency Treatment of Cardiac Arrhythmia" Wednesday at 3:45 p. m. Thursday at 9:05 a. m. a symposium on the Rh factor will be presented by Drs. Israel Davidsohn, Kurt Stern, Ben W. Lichtenstein, William A. Smallberg, Philip L. Aries, and Charles Fields, all of Chicago.

Chicago

Course on Bronchoesophagology.—The University of Illinois College of Medicine will present a course on bronchoesophagology, Nov. 8 to 20, under the direction of Dr. Paul H. Holinger. Interested registrants may write to the Department of Otolaryngology, University of Illinois College of Medicine, 1853 W. Polk St., Chicago 12.

De Lee Lecture.—The 1954 Solomon T. De Lee lecture will be given Oct. 28, 5 p. m., in Dora De Lee Hall of the Chicago Lying-In Hospital at the University of Chicago. Dr. Richard J. Blandau, professor of anatomy of the University of Washington School of Medicine, Seattle, will illustrate his lecture, "Ovulation, Egg Transport and Fertilization Phenomena," by a motion picture showing egg transport. The profession is cordially invited.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

Symposium on the Myocardium.—Dr. William B. Wartman will serve as moderator for a symposium on the myocardium presented by the scientific section of the Chicago Heart Association at the Chicago Academy of Sciences, 2001 N. Clark St., Oct. 26, 8 p. m. "Histochemical Changes of Glycogen" will be considered by Dr. Wartman and "Recent Advances in the Metabolism of the Myocardium" by Dr. William V. Whitehorn. Incoming calls may be made to LIncoln 9-0606. All physicians are welcome.

INDIANA

State Medical Meeting.—The Indiana State Medical Association will hold its 105th annual convention at Murat Temple, Indianapolis, Oct. 24 to 27 under the presidency of Dr. William H. Howard, Hammond. A symposium, "Medical and Surgical Emergencies," will be presented Tuesday at 9:35 a. m. Persons attending the meeting are invited to bring films to the luncheon meeting of the state and county tuberculosis committees, in which the Indiana chapter of the American College of Chest Physicians and the Trudeau Society will participate. Dr. Andrew C. Offutt, Indianapolis, state health commissioner, will have as his subject "Management of Recalcitrant Tuberculosis Patients." The x-ray conference will follow. Tuesday afternoon there will be a panel discussion, "Newer Developments in Medicine." The dinner meeting and 20th anniversary reunion of the class of 1934, Indiana University School of Medicine, Indianapolis, will be held at 6 p. m. at the Indianapolis Athletic Club and the president's night at the Murat Theater at 8 p. m. Dr. Howard will give the presidential address, and entertainment will be furnished by the Indianapolis Symphony Orchestra. A medicolegal economic session is scheduled for Wednesday, 11 a. m. to 12 noon. Wednesday afternoon the section on preventive medicine and public health will present a symposium, "The Health Officer Looks at the Polio Vaccine Validity Trial." The sessions will close with the annual dinner Wednesday, 6:30 p. m., at which Dr. Elmer Hess, Erie, Pa., President-Elect of the American Medical Association, will be the speaker. Other out-of-state speakers during the scientific sessions will include:

R. Arnold Griswold, Louisville, Ky.: Surgical Emergencies.
George L. Thorpe, Wichita, Kan.: General Practice Emergencies.
Paul H. Lorhan, Kansas City, Kan.: Anesthesia Emergencies.
George F. Wilkins, Boston: The Role of the General Practitioner in Industrial Medicine.
Fremont A. Chandler, Chicago: Industrial Backs.
Allan C. Barnes, Cleveland: The Use of Radioisotopes in the Treatment of Pelvic Malignancy.
Bruce Proctor, Detroit: Technique of Radical Neck Dissection.
John R. Haserick, Cleveland: Modern Concepts of Lupus Erythematosus.
William W. Frye, New Orleans: Evaluation of the Antibiotics.
Joseph H. Hafkenschiel, Philadelphia: Newer Drugs in Hypertension.
Mr. Joseph F. Leopold, Dallas, Texas: Why Does Our Government Compete with Its Taxpayers?
John S. DeTar, Milan, Mich.: The Problems Facing Family Physicians Today.

The annual golf tournament and trap shoot are scheduled for Monday morning, and on Monday evening the reception and annual dinner meeting for women physicians (Indianapolis Athletic Club); buffet supper, smoker, and stag party (Murat Temple); and entertainment for physicians, their wives, and guests (Murat Theater) will be held.

MASSACHUSETTS

Worcester Foundation Day.—Gov. Christian A. Herter recently issued a proclamation declaring that Sept. 8 should be known and recognized throughout the state of Massachusetts as "Worcester Foundation Day," thus giving official support to the Worcester Foundation's annual "Heroes of Science" stamp campaign, which opened on that day. The sale of "Heroes of Science" stamps helps raise funds to support the foundation's nonprofit basic research in cancer, arthritis, heart disease, mental illness, muscular dystrophy, and many other fields.

Edward K. Dunham Lectures.—Three lectures under the Edward K. Dunham Lectureship for the Promotion of the Medical Sciences will be delivered at 5 p. m. in the Harvard Medical School amphitheater, Building C, 25 Shattuck St., Boston, by Prof. Konrad Z. Lorenz, departmental director, Max Planck Institute for Physiology of Behavior, Westphalia, Germany, whose theme, "The Approach to Behavior Study from the Viewpoint of Comparative Phylogenetics," will include "Innate Motor Patterns" (Oct. 25), "Innate Releasing Mechanisms" (Oct. 27), and "The Organization of Innate Behavior" (Oct. 29). A fourth lecture, "The Problems of Expression Movements and Ritualization," under the auspices of the departments of biology and psychology, Harvard University, will be given at 5 p. m., Nov. 1, at Harvard College (room 18, Geographical Institute, 2 Divinity Ave., Cambridge). The lectureship, founded in 1923 in memory of Dr. Edward K. Dunham, seeks to bind closer "the bonds of fellowship and understanding between students and investigators in this and foreign countries." The lectures are "free and open to the faculty and students of the Harvard Medical School and College, and all other interested professional persons who may profit by them."

MICHIGAN

Symposium on Hypophyseal Growth Hormone.—A three day International Symposium on the Hypophyseal Growth Hormone, sponsored by the Henry Ford Hospital and the Edsel B. Ford Institute for Medical Research, will be held in the new clinic building auditorium of the Henry Ford Hospital, Oct. 27 to 29. The discussions will cover bioassay, preparation, and physicochemical properties of growth hormone; effects of growth hormone on the mammary gland, skeletal system, connective tissue, islets of Langerhans, kidneys, gastrointestinal tract, and tissue cultures; growth hormone and energy sources; effect of growth hormone on cellular systems; influence of growth hormone on lactation; and its metabolic effects in man. Interested persons should write to the Program Committee, Henry Ford Hospital, Detroit 2. Invitations will be sent to as many persons as possible.

MISSOURI

Meeting of General Practitioners.—The Missouri Academy of General Practice will hold its sixth annual assembly at the Governor Hotel, Jefferson City, Oct. 26 to 28. The meeting will open at 11 a. m. with presentation of "Under- and Postgraduate Medical Education" by Dr. E. Sinks McLarty, Galveston, Texas. Dr. Raymond D. Pruitt, Rochester, Minn., the luncheon speaker, sponsored by the Missouri Heart Association, will have as his topic "In the Aftermath of Myocardial Infarction." Dr. William L. Watson, New York, will deliver "The Etiology and Incidence of Lung Cancer" at 2 p. m. under the sponsorship of the American Cancer Society, after which Drs. Joseph A. Hardy Jr., St. Louis, and Daniel L. Yancey, Springfield, will present a panel on backache in women. The banquet, 7:30 p. m., will be addressed by Mr. John Thornberry, Kansas City, newscaster and commentator. Thursday, 8:30 a. m., Dr. John G. Young, Dallas, Texas, will speak on the premature infant, after which Dr. Pruitt will discuss "Disordered Action of the Heart" and Dr. Watson, "Aids to the Early Diagnosis of Lung Cancer" (sponsored by the American Cancer Society). Drs. McLarty, Young, Pruitt, and Watson will participate in the round-table luncheon at 12 noon. Dr. Young will then discuss "Prevention of Behavior Problems in Children," and Dr. McLarty will speak on preceptorship.

NEBRASKA

Meeting of Omaha Clinical Society.—The Omaha Mid-West Clinical Society will hold its 22nd annual assembly at the Hotel Paxton, Omaha, Oct. 25 to 28 under the presidency of Dr. B. Carl Russum, Omaha. At 11:20 a. m. Monday Dr. M. Digby Leigh, Vancouver, B. C., Canada, will discuss "Obstetrical Anesthesia," and at 12 noon Dr. Philip J. Hodes, Philadelphia, will talk about "Less Common Manifestations of Bronchogenic Carcinoma." Dr. Leigh will lead a discussion on emergency treatment of complications in anesthesia at the buffet luncheon, 1 p. m., and Dr. Henry L. Bockus, Philadelphia, will be discussion leader at dinner, when the topic will be "Role of Roentgenology in Gastroenterology." Tuesday at 11:15 a. m. there will be panel dis[illegible]on on hepatitis, occupatio[illegible] and newer therapeutic agents in cardiovascular diseases. Discussion of "The Brain Damage Syndrome—An Increasingly Important Pediatric Problem" at the buffet luncheon, Tuesday, 1 p. m., will be led by Dr. Eric Denhoff, Providence, R. I., and the dinner discussion Tuesday, "Common Foot Ailments," by Dr. Wallace H. Cole, St. Paul. Dr. Henry A. Schroeder, St. Louis, will be discussion leader at luncheon Wednesday, when the topic will be "New Drugs in the Treatment of Hypertension," and Dr. Morris B. Bender, New York, will lead a discussion on management of neurological problems at dinner Wednesday. Thursday at 11:15 a. m. the following panel discussions have been scheduled: "Anorectal and Colon Disease," "Medical Effects of Alcohol," and "Prolonged Labor." These discussions will be followed by buffet luncheon ("Tubal Ectopic Pregnancy") with Dr. Charles S. Stevenson, Detroit, as leader. Dr. Richard K. Gilchrist, Chicago, will be leader at the dinner Thursday, when the discussion will be concerned with simplification and economic gain derived from improved operating room technique. Other distinguished guests and their first presentations include:

Clinton W. Lane, St. Louis: Mucous Membrane Lesions.
Julius Lempert, New York: New Theory for the Correlation of the Pathology and the Symptomatology of Meniere's Disease.
Clifford M. Harden, Ph.D., Lincoln: How Medicine Looks to Me.
Robert H. Flinn, Battle Creek, Mich.: Federal Civil Defense Medical Program.

NEW JERSEY

Amputee Clinic.—The Kessler Institute for Rehabilitation, West Orange, will conduct a free clinic for children with congenital amputations Oct. 30. The morning will be devoted to orientation lectures by staff and visiting specialists, and the examination clinic for the children will be conducted in the afternoon. Parents should arrange to have a physician refer the child to the institute. Interested professional persons are invited to attend the full-day program.

NEW YORK

Wadsworth Lecture.—The fifth Augustus B. Wadsworth lecture will be given at the division of laboratories and research, New York State Department of Health, Albany, Oct. 28. Dr. Fred W. Stewart, Memorial Center for Cancer and Allied Diseases, New York, will have as his subject "Wadsworth and Ewing: Problems That Would Interest Them Today."

Meeting on Heart Disease.—A postgraduate teaching day program on heart disease for physicians and medical students, sponsored by the heart committee of the Health Association of Rochester and Monroe County in cooperation with the state health department, the Rochester Academy of Medicine, and the Medical Society of the County of Monroe, will be held at the Academy of Medicine, 1441 East Ave., Oct. 28, 2 to 5 p. m. Dr. E. Cowles Andrus, Baltimore, president of the American Heart Association, will discuss "Clinical and Physiological Consequences Following Surgical Treatment of Mitral Stenosis," and Dr. Harold D. Levine, Boston, will present "Modifying Factors in the Diagnosis of Angina Pectoris."

Heart Day.—The Utica Academy of Medicine and the medical societies of the counties of Oneida, Herkimer, and Madison announce the following program for Heart Day at the Hotel Utica, Oct. 28, beginning at 1:30 p. m.:

H. A. Snellen, Leiden, The Netherlands: Collateral Circulation to the Lungs in Pulmonary Atresia, Clinical and Anatomical Data.
Janet S. Baldwin, New York: Angiocardiology and Cardiac Catheterization as Diagnostic Aids, Particularly Related to Congenital Heart Disease.
Walter H. Abelmann, Boston: Contributions of Clinical Pulmonary Physiology to Evaluation of Patients with Cardio-Pulmonary Problems.
Benedict J. Duffy Jr., Washington, D. C.: Radioactive Isotopes in Diagnosis and Treatment of Heart Disease.

After 6 o'clock dinner the evening session will convene at 7:30 p. m. to hear Dr. Gustav Nylin, president, European Society of Cardiology, honorary professor of medicine, and chief of cardiac clinic, University of Stockholm (Sweden), discuss "Circulatory Studies with Radioactive Isotopes" and Dr. Lawrence A. Kohn, Rochester, "Recent Trends in Cardiovascular Drug Therapy."

Meetings on Arthritis and Rheumatism.—The Medical Society of the County of Erie and the Buffalo chapter of the Arthritis and Rheumatism Foundation (of America) will present a program on arthritis and rheumatism, Oct. 26, 9 p. m., at the Hotel Statler, Buffalo. Speakers will be Gen. George C. Kenney, president of the foundation, and Dr. Russell L. Cecil, national medical director of the foundation, both from New York City. General Kenney's topic will be "The Development and Work of the Foundation" and Dr. Cecil's, "Most Recent Findings and Concepts in the Management of Arthritis and Rheumatoid Diseases." As a prelude to the joint meeting in the evening, exclusively for the profession, the Buffalo chapter plans to hold a clinical session in the New York room, from 3 to 5 p. m., designed in the main for representatives of organizations and groups allied with medicine or concerned in the broad problem of arthritis and rheumatism; physicians are also welcome. General Kenney will discuss "The Economic Aspects of Arthritis in Relation to the Impact on Industry" and Dr. Cecil, "The Latest Developments and Progress in Administration of Therapy to Arthritics." A panel of local physicians will lead the discussion and the question-and-answer period.

New York City

Hospital News.—Dr. Karl P. Klassen, professor of research surgery, Ohio State University College of Medicine, Columbus, will present "Pulmonary Biopsy" (motion picture) before the division of pulmonary diseases at Montefiore Hospital Oct. 26, at 2:30 p. m. in Binswanger Memorial lecture room.

Reiss Memorial Lecture.—The New York Institute of Clinical Oral Pathology announces the third Herman L. Reiss memorial lecture, to be held at the New York Academy of Medicine Oct. 25, 8:30 p. m. The essayist will be Raymond J. Nagle, D.M.D., dean, New York University College of Dentistry, who will lecture on the subject "Temporomandibular Function." Members of the medical, dental, and allied professions are cordially invited.

Lecture on Psychomotor Epilepsy.—Dr. Percival Bailey, professor of neurology and neurological surgery, University of Illinois College of Medicine, Chicago, will deliver the 1954 Charles A. Elsberg lecture Nov. 16, 8:30 p. m., at the New York Academy of Medicine, 2 E. 103rd St. Dr. Bailey will have as his subject "Psychomotor Epilepsy—Its Relation to the Visceral Brain." Preceding the lecture, a dinner in Dr. Bailey's honor will be held in the President's Gallery of the academy.

Graduate Fortnight.—The New York Academy of Medicine (2 E. 103 St.) will present the following evening lectures (8:30 p. m.) during the second week of its graduate fortnight:

Oct. 25, Current Status of the Development of Antimicrobial Agents, Gladys L. Hobby, Ph.D., Brooklyn, N. Y.
Complications of Antibiotic Therapy, Louis Weinstein, Boston.
Oct. 26, Hormones and Infection, Lewis Thomas, Minneapolis.
Staphylococcus Infection, Vernon Knight, Nashville, Tenn.
Oct. 27, Low Resistance to Infections: Relationship to Abnormalities in Gamma Globulin, David Gitlin, Boston.
Present Day Considerations of the Rabies Problem, Horace L. Hodes, New York.
Histoplasmosis, Chester W. Emmons, Ph.D., Bethesda, Md.
Oct. 28, Acute Diarrheal Diseases of Bacillary Origin, Francis S. Cheever, Pittsburgh.
Evaluation of Diagnostic Tests in Infection, Calderon Howe, New York.
Oct. 29, Approaches to the Chemotherapy of Viral Infections, Frank L. Horsfall Jr., New York.
Antibiotic Therapy of Viral and Rickettsial Diseases, Joseph E. Smadel, Washington, D. C.

The following morning panel meetings have been scheduled from 11 a. m. to 12:30 p. m.: Monday, "The Management of Regional Infections"; Wednesday, "Combined Medical and Surgical Treatment of Tuberculosis"; and Friday, "The Therapy of Amebiasis and Other Parasitic Infections."

OHIO

Postgraduate Courses.—On Oct. 27 and 28 the Frank E. Bunts Educational Institute, Cleveland Clinic, Cleveland, will offer a postgraduate course on diseases of the chest, under the sponsorship of the Cleveland Society for Diseases of the Chest and the American College of Chest Physicians. The registration fee is

$15, except for interns, residents, and members of the armed forces in uniform, who will be admitted free. A panel on emphysema is planned for Wednesday, 2 p. m., after which a panel discussion of pneumoconiosis will be presented. Thursday morning there will be a panel discussion, "Surgery in Mitral Stenosis." About 20 single-author presentations have been scheduled.

District Meeting in Akron.—The annual fall meeting of the sixth councilor district will be held in the Mayflower Hotel, Akron, Oct. 27. Out-of-state speakers include:

Louis M. Hellman, Brooklyn, N. Y.: Obstetrical Problems.
Sylvester J. O'Connor, Ann Arbor, Mich.: Conservative Management of Acute Shoulder Syndromes.
Reed M. Nesbit, Ann Arbor, Mich.: Bladder Obstructions of Childhood.
Francis C. Grant, Philadelphia, and Gilbert Horrax, Boston: The Neurosurgeon and the Herniated Disc.
William D. Robinson, Ann Arbor, Mich.; L. Maxwell Lockie and Bernard M. Norcross, Buffalo: Rheumatic Diseases.

Panel discussions and conferences will include a clinicopathological conference and "The Control of Pain," "Thyroid Diseases," "Problems Common to Arthritis and Orthopedics," "The Ischemic Kidney," and "Hemolytic Anemias" (lecture and panel).

OKLAHOMA

Oklahoma City Clinic.—The 24th annual fall conference of the Oklahoma City Clinical Society will be held Oct. 25 to 28. Lectures and discussions by 16 guest speakers and an address by Dr. Walter B. Martin, Norfolk, Va., President of the American Medical Association, are included in the four day postgraduate teaching program. All physicians who are members of a county medical society are invited to attend the clinic. The guests participating in the teaching program are Drs. George C. Adie, New Rochelle, N. Y.; Herbert S. Alden, Atlanta, Ga.; L. Henry Garland and Ralph Soto-Hall, San Francisco; Arnold S. Jackson and William S. Middleton, Madison, Wis.; William O. Johnson, Louisville, Ky.; Russell J. Blattner, Houston, Texas; William J. Dieckmann, Chicago; Lloyd G. Lewis, Washington, D. C.; John J. Modlin, Columbia, Mo.; James L. Poppen, Boston; William G. Sauer and Kinsey M. Simonton, Rochester, Minn.; David E. Smith, St. Louis; and Joseph F. Volker, D.D.S., Birmingham, Ala. Information may be obtained from the executive secretary, 503 Medical Arts Bldg., Oklahoma City.

PENNSYLVANIA

Society News.—The annual fall clinic of the Fayette County Medical Society will be conducted by Dr. William Thomas Foley, New York, at the Annette Nurses Home, Uniontown Hospital, on the afternoon of Oct. 27. A dinner meeting has also been arranged, after which a talk will be given on peripheral vascular diseases. Dr. Foley will present cases illustrating principles as they relate to peripheral vascular diseases, coronary insufficiency, cerebral insufficiency, and the current status of anticoagulant therapy.

Philadelphia

Phi Delta Epsilon Lecture.—Sigma chapter of Phi Delta Epsilon fraternity at the Temple University School of Medicine, Philadelphia, will hold the eighth annual lectureship, Oct. 27, at 4 p. m. in the medical school auditorium. The guest speaker, Dr. Harold G. Wolff, professor of medicine, Cornell University Medical College, New York, will discuss "Headache Mechanisms."

Seminar on Cardiology.—The Philadelphia Academy of General Practice announces its second annual seminar in postgraduate medicine at the Barclay Hotel, Rittenhouse Square at 18th Street, Oct. 27, 10:30 a. m. The topic, "Cardiology," will be developed by Drs. Harry Gold, New York ("Current Developments in the Management of Congestive Failure"); Joseph G. Benton, New York ("Rehabilitation of the Cardiac"); and Menard M. Gertler, Bethesda, Md. ("Coronary Artery Disease in Young Adults"). Admission to scientific session without charge; luncheon, $3.50.

Course in Medical History.—The section on medical history of the College of Physicians of Philadelphia is giving a course on medical history to the students of the medical colleges of Philadelphia. The course opened Oct. 18 with "The Meaning and Values of Medical History" by Richard H. Shryock, Ph.D., Baltimore. Dr. Owsei Temkin, Baltimore, will present "Classical Medicine," Oct. 25; "Renaissance Medicine," Nov. 1; and "17th and 18th Century Medicine," Nov. 8. On Nov. 15 Dr. Shryock will have as his subject "19th and 20th Century Medicine" and on Nov. 22, "Social Aspects of Medical History."

Meeting on Allergy.—At the fall meeting of the Philadelphia Allergy Society, Oct. 27 at the College of Physicians, Dr. Stanley F. Hampton, assistant professor of clinical medicine, Washington University School of Medicine, St. Louis, will present "Causes and Treatment of Intrinsic Bronchial Asthma," which will be discussed by Drs. Philip M. Gottlieb, Merle M. Miller, and Louis Tuft. Three original papers on allergy will be presented by Dr. Arthur G. Baker, Ridley Park; Dr. Charles S. Pennypacker, Bryn Mawr; and Dr. Elliott L. Goodman and Dr. Edmund E. Ehrlich, Philadelphia.

SOUTH CAROLINA

Surgeons Meet in Columbia.—The South Carolina chapter of the American College of Surgeons will meet at the Columbia Hotel in Columbia, Oct. 29 and 30. The meeting is not exclusively for the members of the college. Among the guest speakers will be Dr. John Adams, Boston; Dr. Bradley L. Coley, New York; Dr. William F. Rienhoff, Baltimore; and Dr. Alton Ochsner, New Orleans. There will be a banquet and dance Sunday evening. The scientific session will terminate Saturday noon in time for all to occupy a special section on the 50-yard line at the Carolina-Maryland football game. Reservations for football tickets and for the dining room should be made with Dr. John R. Timmons, 1401 Taylor St., Columbia, S. C.

WASHINGTON

General Practitioners Meet in Tacoma.—The annual convention and scientific assembly of the Washington Academy of General Practice will be held at the Winthrop Hotel, Tacoma, Oct. 29 and 30, under the presidency of Dr. Austin B. Kraabel, Seattle, who, with Dr. Jesse W. Read, Tacoma, president, Pierce County Medical Society, will welcome the attendants of the meeting. Dr. Herbert E. Schmitz, Chicago, will make the following presentations: "Indications of Hysterectomy," "Preinvasive Carcinoma of the Cervix," "Treatment of Radioresistant Cancer of the Cervix," and "Treatment of Cancer of the Uterine Fundus." Dr. Arnold S. Jackson, Madison, Wis., will discuss "The Acute Surgical Abdomen," "Diagnosis and Treatment of Diseases of the Thyroid," "Present Concepts in the Treatment of Hyperthyroidism," and "Tumors and Cysts of the Neck." All physicians and wives are invited to the banquet Friday, 7 p. m. (dress optional). The guest speaker, Dr. William B. Hildebrand, Menasha, Wis., president, American Academy of General Practice, will have as his topic "Medicine Looks at Its Problems."

WISCONSIN

Plan More State Health Conferences.—Because of the success of two recent school health conferences, the division on school health of the Commission on State Departments, State Medical Society of Wisconsin, has recommended four more such conferences, to be held at Stevens Point in October and Milwaukee in November, and the possibility of conferences in Superior and Whitewater in the spring or fall of 1955. Two previous conferences at Eau Claire and Oshkosh, April 7 and May 13, drew a total attendance of 457. The conferences featured addresses on the parent's concern with school health and on the integrated physical and emotional growth of children. Discussion groups, with parents, school personnel, nurses, and physicians taking part, considered control of disease, emotional problems of child growth, health examinations of pupils and school personnel, and health aspects of athletics. The regional conferences on school health now being held at various centers in Wisconsin, an outgrowth of the statewide conference held at Madison in 1952, are an effort on the part of the state medical society to carry discussion of school health problems to the grass-roots level. Although the society is serving as sponsor of the conferences, excellent cooperation in the planning and conduct of the meetings is being received from the state departments of education and health and locally from the teachers' colleges, the parent-teacher associations, medical societies, school officials, and others.

GENERAL

National Rehabilitation Association.—The National Rehabilitation Association will hold its annual conference at the Lord Baltimore Hotel, Baltimore, Oct. 24 to 27. Physicians participating in the program include: Francis J. Borges, Jerome Hartz, Richard D. Hoover, James A. McCallum, James P. Miller, and Helen B. Taussig, Baltimore; Donald A. Covalt, New York; George H. Gehrmann, Wilmington, Del.; Robert L. Harding, Harrisburg, Pa.; Roy M. Hoover, Fisherville, Va.; and John A. Lewis Jr., Milton Meltzer, Winfred Overholser, and Howard M. Payne, Washington, D. C.

The Community Fund Campaign.—During the month of October the nationwide Community Fund campaign for funds is being waged. Among the health agencies aided by these funds are clinics, free hospital services, visiting nurse groups, infant welfare, maternity care, and homes for children and the aged. The Community Fund needs $30,000,000 in gifts this month from 1,900 cities in the United States and Canada to support these charities during 1955. Last year 69.2% of the medical profession responded nationally with an average gift of $60.91 to the Community Chest and Fund drive. In some cities—Pittsfield, Mass.; Cortland, N. Y.; and Hazelton, Pa.—the profession was represented 100% with still larger average gifts. October presents the opportunity to physicians again to help their fellow man.

Health of School Children Improves.—According to the Metropolitan Life Insurance Company, a study of prevailing mortality among school age children over the past 20 years shows a reduction in the death rate per 100,000 for boys from 158 to 57 and for girls from 126 to 37. In each sex, decreases of 85% or more were recorded over the 20 year period in the death rates for a number of diseases, including the principal communicable diseases of childhood, appendicitis, pneumonia and influenza, and tuberculosis. Despite this progress, there are still about 15,000 deaths annually among children at school ages in the general population of the United States, and a considerable part of the loss of life is amenable to control, according to the statisticians. Accidents are the greatest single menace to child life, accounting for more than two-fifths of the total mortality among boys and for more than one-fourth of the mortality among girls. Second in rank as a cause of death are the cancers, which 20 years ago were a minor cause of death at the school ages. The leukemias account for nearly half of all the deaths attributed to malignant disease among school-age children.

Winners of Plastic Surgery Scholarships.—The Foundation of the American Society of Plastic and Reconstructive Surgery, Inc., announces the following awards in its 1954 scholarship contest: first prize, "Ureteral Reconstruction with Splint Grafts: An Experimental Study," by Dr. Charles E. Horton, Durham, N. C.; second prize, "An Experimental Study of Polyvinyl Sponge as a Substitute for Bone," by Dr. Alfred M. Struthers, Rochester, Minn.; and honorable mention, "Roller and Wringer Injuries: Clinical and Experimental Studies," by Dr. Martin A. Entin, Montreal, Canada. The prize-winning papers will be presented at the foundation's day, Oct. 26, during the annual meeting of the American Society of Plastic and Reconstructive Surgery at the Hollywood Beach Hotel, Hollywood, Fla. Dr. Bengt Johanson, Stockholm, Sweden, will discuss the surgical treatment of urethral strictures, and Dr. Robert M. McCormack, Rochester, N. Y., last year's scholarship winner, will recount his recent experiences in plastic service centers abroad.

Meeting on Gastroenterology.—The 19th and last convention of the National Gastroenterological Association and the first annual convention of the American College of Gastroenterology, which became successor to the association (The Journal, Feb. 27, 1954, page 773), will be held at the Shoreham, Washington, D. C., Oct. 25 to 27, preceding a course in postgraduate gastroenterology, Oct. 28 to 30. The scientific sessions are open to all physicians without charge. Dr. Sigurd W. Johnsen, Passaic, N. J., president of the association, will preside at the Monday morning session and Dr. Lynn A. Ferguson, Grand Rapids, Mich., president of the college, at the Thursday morning session. A panel discussion on 25 years' observation of the gallbladder controversy will be presented Monday at 10:45 a. m., and an invited panel discussion on amebiasis will be held Monday afternoon. The president's annual reception at 8 p. m. will be sponsored by Winthrop-Stearns, Inc. (admission by card only). A symposium on esophageal varices is scheduled for Tuesday, 9 a. m. Luncheon, 12:30 p. m., will be sponsored by Burton, Parsons & Co. (admission by card only). Dr. George T. Pack, New York, has been invited as the speaker. The annual banquet will be held at 7 p. m. Tuesday. In all, 65 guests have been invited to participate in the presentations.

American Dietetic Association.—The annual meeting of the American Dietetic Association will be held at the Commercial Museum, Philadelphia, Oct. 26 to 29. At 2 p. m. Wednesday Drs. Paul Gyorgy, Philadelphia, and William J. McGanity, Nashville, Tenn., will talk on maternal and infant health, the former having as his topic "Trends and Advances in Infant Nutrition" and the latter, "Nutrition Implications of the Vanderbilt Cooperative Study." At the same hour Dr. Fredrick J. Stare, Boston, will moderate a discussion on non-nutritive sweeteners in which Dr. Robert M. Kark, Chicago, will participate. At 10 a. m. Thursday Dr. George H. Berryman, North Chicago, Ill., will talk on obesity and Dr. Jeremiah Stamler, Chicago, on recent progress in nutrition and hardening of the arteries, during a discussion entitled "Diet Therapy—1954." At 2 p. m. Dr. George Rosen, New York, will have as his subject "Nutrition in the History of Medicine," and Dr. Mark A. Hayes, New Haven, Conn., will present "The Dietetic Management of Postgastrectomy Dumping Syndrome." Other physicians participating in the program will include Anthony J. Rourke, New Rochelle, N. Y.; Samuel M. Wishik, Pittsburgh; George H. Gehrmann, Wilmington, Del.; George J. Gabuzda, Cleveland; and William H. Sebrell, Bethesda, Md.

Meeting of Chest Physicians.—A joint meeting of the Potomac and Virginia chapters of the American College of Chest Physicians at the Shoreham Hotel in Washington, D. C., Oct. 31, will open at 10 a. m. with a symposium on cardiac surgery. Dr. Edgar W. Davis, Washington, D. C., will be moderator for the following program:

Interatrial Septal Defects, Elton Watkins, Boston.
Surgery of the Aorta, Henry T. Bahnson, Baltimore.
Plastic Valves in Aortic Insufficiency, Charles A. Hufnagel, Washington, D. C.
Valvular Stenosis Surgery, Robert P. Glover, Philadelphia.

Dr. James J. Feffer, Washington, D. C., will be moderator at a round-table luncheon on pulmonary emphysema. The panel will be composed of Drs. Bruce W. Armstrong, Baltimore, and Milton Gusack and Paul F. Jaquet, Washington, D. C. A round-table luncheon at the same time, 12:30 p. m., which will be concerned with "Evaluation of Patients for Cardiac Surgery," will have as moderator Dr. Bernard J. Walsh, Washington, D. C., and as collaborators Dr. John O. Nestor, Washington, D. C., and Dr. Robert P. Glover, Philadelphia. At 2 p. m. Dr. Sol Katz, Washington, D. C., will moderate a discussion about "Problems Encountered in the Present-Day Management of Tuberculosis." The scientific program will be closed with a symposium on bronchogenic carcinoma, with Dr. Frank S. Ashburn, Washington, D. C., as moderator.

Fulbright Scholarships.—Fulbright scholarships for graduate study abroad are open to professional persons not now engaged in college or university study. Any United States citizen between the ages of 18 and 35 with a bachelor's degree is eligible for these foreign study awards. Applicants must be at the predoctoral level. The closing date for applications for the 1955-1956 academic year is Nov. 1, 1954. Candidates-at-large may apply directly to the Institute of International Education, 1 E. 67th St., New York. Countries in which the Fulbright program operates are Australia, Austria, Belgium, Luxemburg, Burma, Ceylon, Denmark, Egypt, Finland, France, Germany, Greece, India, Italy, Japan, the Netherlands, New Zealand, Norway, Pakistan, the Philippines, Sweden, the Union of South Africa, and the United Kingdom. Eligibility requirements for the Fulbright awards are: (1) United States citizenship; (2) a college degree or its equivalent at the time the award is taken up; (3) knowledge of the language of the country sufficient to carry on the proposed study; (4) age, 35 years or under; and (5) good health. Fulbright awards are made entirely in the currencies of participating countries abroad. The Fulbright Act authorizes the use of foreign currencies and credits acquired through the sale of surplus property abroad for educational exchange. The awards cover transportation, tuition, books, and maintenance for one academic year.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States and its territories and possessions in the weeks ended as indicated:

	Sept. 25, 1954		
Area	Paralytic Type	Total Cases Reported	Sept. 26, 1953, Total
New England States			
Maine	3	7	18
New Hampshire	..	7	8
Vermont	1	2	9
Massachusetts	16	80	44
Rhode Island	..	7	28
Connecticut	5	24	26
Middle Atlantic States			
New York	64	161	250
New Jersey	32	58	43
Pennsylvania	..	82	96
East North Central States			
Ohio	53	190	175
Indiana	12	64	31
Illinois	49	172	119
Michigan	57	137	138
Wisconsin	21	54	69
West North Central States			
Minnesota	14	61	146
Iowa	34	104	20
Missouri	17	40	44
North Dakota	..	9	13
South Dakota	..	9	5
Nebraska	19	57	7
Kansas	19	56	24
South Atlantic States			
Delaware	1	2	2
Maryland	11	20	28
District of Columbia	1	3	2
Virginia	18	44	30
West Virginia	16	36	16
North Carolina	16	39	20
South Carolina	6	14	3
Georgia	4	29	15
Florida	47	86	25
East South Central States			
Kentucky	26	49	17
Tennessee	25	49	11
Alabama	2	4	11
Mississippi	..	11	7
West South Central States			
Arkansas	8	12	16
Louisiana	9	14	15
Oklahoma	6	20	9
Texas	40	87	37
Mountain States			
Montana	3	11	19
Idaho	..	16	7
Wyoming	9	23	2
Colorado	8	26	6
New Mexico	4	11	5
Arizona	3	16	18
Utah	..	25	3
Nevada	..	6	1
Pacific States			
Washington	10	29	20
Oregon	10	21	15
California	123	260	180
Territories and Possessions			
Alaska	8	18	2
Hawaii	3	3	2
Puerto Rico	..	..	2
Total	833	2,365	1,859

Anesthesiologists Meet in Cincinnati.—The American Society of Anesthesiologists will hold its annual meeting at the Netherland Plaza Hotel, Cincinnati, Oct. 25 to 29, under the presidency of Dr. Stevens J. Martin, Hartford, Conn. Monday morning will be devoted to a symposium on fundamental research and Monday afternoon to a symposium on general scientific anesthetic topics. A Dutch mix will be held Monday, 6 p. m., at the Restaurant Continental for members, wives, their guests, and exhibitors. The Tuesday morning symposium on pain will be followed by a panel luncheon, "Obstetrical Anesthesia," and an afternoon symposium on circulation. The Beverly Hills Nite-Life Party will be held Tuesday evening, as will the Pent-Skeller Stag parties, one in a penthouse and the other in a rathskeller. The following motion pictures on anesthesia will be shown throughout Wednesday:

Nitrous Oxide-Oxygen Anaesthesia in Dental Surgery.
Ether Analgesia.
Some Experiments on the Heart in Relation to Cardiac Arrest.
Anesthesia for Tonsillectomies in Children.
Regional Block Analgesia.
Post Anesthetic Rooms.

The topic of the Wednesday morning symposium is respiration and that of the Wednesday afternoon symposium, clinical research in anesthesia. A panel discussion, "Anesthesia and Public Relations," will be presented Wednesday noon by Mr. Alton Blakeslee, medical writer, Associated Press, New York; Mr. *John O'Brien, president, Akron (Ohio) Better Business Bureau*; and Mr. Donald Dunham, medical writer, Cleveland Press, with Dr. Brant B. Sankey, Cleveland, as moderator. Motorama, a tour of Cincinnati, has been planned Wednesday for wives and the guests of members. A cocktail party, 6:30 p. m. Wednesday, will precede the dinner dance, at which Dr. Torsten Gordh, Stockholm, Sweden, will be the guest speaker. The 1953 Distinguished Service award will be presented to Dr. Charles F. McCuskey, Los Angeles.

Multiple Sclerosis Grant.—Edward Pastore, a Ph.D. candidate in the field of biochemistry at the Boston University School of Medicine, has been awarded a fellowship for study in multiple sclerosis at the University of Naples, Italy, during the coming academic year. This grant is one of six awarded to American students this year by the government of Italy in cooperation with the Institute of International Education, 1 E. 67th St., New York, the organization responsible for the selection of contestants. Mr. Pastore will study free amino acids in the cerebrospinal fluid by means of paper chromatographic methods. This project has been conducted under a grant to the Boston University School of Medicine from the National Multiple Sclerosis Society. Mr. Pastore's award, in addition to free tuition at the University of Naples (about six months), includes a grant of 600,000 lire (about $970) plus a 10,000 lire allowance for travel within Italy. He will also receive $300 toward his round-trip fare from the Italian Embassy in Washington.

CANADA

Conference on Prepaid Medical Service Plans.—Dr. Elmer Hess, Erie, Pa., President-Elect of the American Medical Association, will address the Western Conference of Prepaid Medical Service Plans, which meets at the Empress Hotel in Victoria, B. C., Oct. 27 to 29. Dr. Hess, speaking on Friday, will describe the activities and values of the A. M. A. Council on Medical Service. Dr. Francis T. Hodges, San Francisco, chairman of the conference and president of the California Physicians' Service, will also address the meeting, as will Mr. Jerry Pettis, executive assistant to the president of the Los Angeles County Medical Society, who will discuss relationships of medical societies with prepaid medicine. Care of indigents on opposite sides of the border will be detailed by Drs. Frank A. Turnbull of Vancouver, B. C., and Quentin Kintner of Port Angeles, Wash.

CORRECTION

Correction in Education Number.—In the Education Number of THE JOURNAL, Sept. 11, 1954, page 159, in table 23, the total of "Other Graduate Students in Basic Medical Sciences" should be 2,293 rather than 2,243. The first number (Medical College of Alabama) of the vertical total column in the same table should be 444 rather than 394. These same errors are reflected in the grand total, which should be 59,480 instead of 59,430. This latter correction also applies to the "totals" column of table 24 and in all instances in which these numbers are used in the accompanying text.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1954 Clinical Meeting, Miami, Fla., Nov. 29-Dec. 2.

1955 Annual Meeting, Atlantic City, N. J., June 6-10.

1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.

1956 Annual Meeting, Chicago, June 11-15.

1956 Clinical Meeting, Seattle, Nov. 27-30.

National Medical Public Relations Conference, McAllister Hotel, Miami, Fla., Nov. 28. Mr. Leo F. Brown, 535 North Dearborn St., Chicago 10, Director.

American Academy for Cerebral Palsy, Williamsburg Inn, Williamsburg, Va., Nov. 4-6. Dr. Harry E. Barnett, 116 South Michigan Blvd., Chicago 3, Secretary.

American Academy of Dental Medicine, Hotel Statler, New York, Dec. 5. Dr. William M. Greenhut, 124 East 84th St., New York 28, Secretary.

American Academy of Dermatology and Syphilology, Palmer House, Chicago, Dec. 4-9. Dr. J. E. Rauschkolb, P. O. Box 6565, Cleveland 1, Secretary.

American Academy of Obstetrics and Gynecology, Palmer House, Dec. 14. Dr. Paul Hodgkinson, 116 South Michigan Ave., Chicago 3, Secretary.

American Association of Medical Clinics, Jung Hotel, New Orleans, Nov. 12-14. Dr. Arthur H. Griep, 420 Cherry St., Evansville, Ind., Secretary.

American Association for the Surgery of Trauma, Hotel Claridge, Atlantic City, N. J., Nov. 11-13. Dr James K. Stack, 700 North Michigan Blvd., Chicago 11, Secretary.

American College of Cardiology, Interim Meeting, Algiers Hotel, Miami Beach, Fla., Nov. 11-13. Dr. Philip Reichert, 140 West 57th St., New York 19, Secretary.

American College of Gastroenterology, The Shoreham, Washington, D. C., Oct. 25-30. Dr. A. Xerxes Rossien, 33 West 60th St., New York 23, Secretary.

American College of Surgeons, Convention Hall, Atlantic City, N. J., Nov. 14-19. Dr. Michael L. Mason, 40 East Erie St., Chicago 11, Secretary.

American Congress on Obstetrics and Gynecology, Palmer House, Dec. 13-17. Dr. R. Gordon Douglas, 116 South Michigan Ave., Chicago 3, General Chairman.

American Dental Association, Miami, Fla., Nov. 8-11. Dr. Harold Hillenbrand, 222 East Superior St., Chicago 11, General Secretary.

American Society of Anesthesiologists, Netherland-Plaza Hotel, Cincinnati, Oct. 25-30. Dr. J. Earl Remlinger Jr., 188 West Randolph St., Chicago 1, Secretary.

American Society for the Study of Arteriosclerosis, Sheraton Hotel, Chicago, Oct. 31-Nov. 1. Dr. O. J. Pollak, P. O. Box 228, Dover, Del., Secretary.

American Society of Tropical Medicine and Hygiene, Hotel Peabody, Memphis, Tenn., Nov. 4-6. Dr. John E. Larsh Jr., Dept. of Parasitology, School of Public Health, Univ. of North Carolina, Chapel Hill, N. C., Secretary.

American Therapeutic Society, The Chase Hotel, St. Louis, Nov. 4-7. Dr. Oscar B. Hunter, 915 Nineteenth St. N. W., Washington, D. C., Secretary.

Association of Military Surgeons of the United States, Hotel Statler, Washington, D. C., Nov. 29-Dec. 1. Dr. Robert E. Bitner, Armed Forces Institute of Pathology, Washington 25, D. C., Secretary.

Association of State and Territorial Health Officers, Hotel Washington, Washington, D. C., Dec. 6-10. Dr. Franklin D. Yoder, State Board of Health, Cheyenne, Wyo., Secretary.

California Academy of General Practice, Statler Hotel, Los Angeles, Oct. 24-27. Mr. Wm W. Rogers, 461 Market St., San Francisco 5, Executive Secretary.

Central Society for Clinical Research, Drake Hotel, Chicago, Oct. 29-30. Dr. Robert H. Ebert, 950 East 59th St., Chicago 37, Secretary.

Conference on Myasthenia Gravis, University of Pennsylvania School of Medicine, Philadelphia, Dec. 8-9. Mrs. Agnes K. Peterson, 2 East 103rd St., New York 29, Executive Director.

Congress of Neurological Surgeons, The Waldorf-Astoria, New York, Nov. 4-6. Dr. Bland W. Cannon, 1092 Madison Ave., Memphis, Tenn., Secretary.

District of Columbia, Medical Society of the, Hotel Shoreham, Washington, D. C., Nov. 1-3. Mr. Theodore Wiprud, 1718 M St. N. W., Washington, D. C., Secretary.

Indiana State Medical Association, Murat Temple, Indianapolis, Oct. 26-28. Mr. James A. Waggener, 23 East Ohio St., Indianapolis 4, Executive Secretary.

Industrial Hygiene Foundation of America, Mellon Institute, Pittsburgh, Nov. 17-18. Dr. C. Richard Walmer, Mellon Institute, Pittsburgh 13, Managing Director.

Interstate Post Graduate Medical Asssociation of North America, Municipal Auditorium, Minneapolis, Nov. 1-4. Dr. Erwin R Schmidt, 1300 University Ave., Madison 6, Wis., Secretary.

Inter-Society Cytology Council, Statler Hotel, Boston, Nov. 12-13. Dr. John B. Graham, 32 Fruit St., Boston, Chairman, Program Committee.

Medical Society Executive Conference, Everglades Hotel, Miami, Fla., Nov. 29. Mr. William H. Bartleson, 3036 Gillham Road, Kansas City 8, Mo., Secretary.

Midwestern Section of American Federation for Clinical Research, Thorne Hall Auditorium, Northwestern University Medical Campus, Chicago, Oct. 28. Dr. R. L. Grissom, Univ. of Nebraska College of Medicine, Dept. of Internal Medicine, Omaha 5, Secretary.

National Rehabilitation Association, Baltimore, Oct. 24-27. Mr. E. B. Whitten, 514-16 Arlington Bldg., 1025 Vermont Ave., N.W., Washington, D. C., Executive Director.

National Society for Crippled Children and Adults, Statler Hotel, Boston, Nov. 3-5 Mr. Lawrence J. Linck, 11 South LaSalle St., Chicago 3, Executive Director.

Oklahoma City Clinical Society Conference, Oklahoma City, Oct. 25-28. Dr. Charles E. Leonard, 512 Medical Arts Bldg., Oklahoma City 2, Secretary.

Omaha Mid-West Clinical Society, Paxton Hotel, Omaha, Oct. 25-28. Dr. Louis E. Moon, 1031 Medical Arts Bldg., Omaha 2, Secretary.

Post-Graduate Clinic, *Michigan Academy of General Practice, Sheraton-Cadillac Hotel, Detroit, Nov. 10-11.* Dr. F. P. Rhoades, 970 Maccabees Bldg., Detroit 2, Chairman.

Puerto Rico Medical Association, Santurce, Dec. 8-12. Dr. Luis R. Guzman-Lopez, Box 9111, Santurce, Secretary.

Radiological Society of North America, Biltmore Hotel, Los Angeles, Dec. 5-10. Dr. Donald S. Childs, 713 East Genesee St., Syracuse 2, N. Y., Secretary.

Regional Meetings, American College of Physicians:

Michigan, Grand Rapids, Dec. 4. Dr. H. Marvin Pollard, 1313 East Ann St., Ann Arbor, Governor.

New Jersey, Newark, Nov. 3. Dr. Edward C. Klein Jr., 6 South Kingman Rd., South Orange, N. J., Governor.

Western New York, Syracuse, Nov. 19. Dr. Edward C. Reifenstein, 109 South Warren St., Syracuse 2, Governor.

Western Pennsylvania, Pittsburgh, Oct. 27. Dr. Roy R. Snowden, 3509 Fifth Ave., Pittsburgh 13, Chairman.

Seaboard Medical Association, Hotel Cherry, Wilson, N. C., Nov. 14-16. Dr. James M. Habel Jr., 191 Bosley Ave., *Suffolk, Va., Secretary.*

Southern Medical Association, St. Louis, Nov. 8-11. Mr. C. P. Loranz, 1020 Empire Bldg., Birmingham 3, Ala., Secretary.

Southern Society of Cancer Cytology, St. Louis, Nov. 8-11. Dr. J. Ernest Ayre, 1155 N.W. 14th St., Miami, Fla., Secretary.

Southern Surgical Association, Hollywood Beach Hotel, Hollywood, Fla., Dec. 7-9. Dr. George G. Finney, 2947 St. Paul St., Baltimore 18, Secretary.

Southwestern Medical Association, Hotel Paso del Norte, El Paso, Texas, Nov. 17-19. Dr. Celso C. Stapp, 800 Montana St., El Paso, Texas, Secretary.

Virginia Medical Society of, Shoreham Hotel, Washington, D C, Oct 31-Nov 3 Mr Robert I Howard, 1105 W Franklin St, Richmond, Executive Secretary

Western Surgical Association, The Broadmoor, Colorado Springs, Colo, Dec 2-4 Dr Michael L Mason 154 East Erie St, Chicago 11, Secretary

FOREIGN AND INTERNATIONAL

Commonwealth Health and Tuberculosis Conference, Royal Festival Hall, London, England, June 21-25, 1955 Mr J H Harley Williams, Tavistock House North, Tavistock Square, London, W C 1, England, Secretary General

Congress of International Association of Applied Psychology, London England, July 18 23, 1955 Dr C B Frisby, National Institute of Industrial Psychology, 14 Welbeck St, London, W 1, England, President

Congress of the International Diabetes Federation Cambridge, England, July 4 8, 1955 Mr James G L Jackson 152 Harley St, London, W 1, England, Executive Secretary General

European Congress on Rheumatism, Scheveningen The Hague, Netherlands, June 13 17, 1955 Dr H van Swaay, Pieter Bothstraat 12, The Hague, Netherlands Secretary

Health Congress of the Royal Sanitary Institute, Bournemouth, England, April 26-29, 1955 Mr P Arthur Wells, Royal Sanitary Institute, 90 Buckingham Palace Road, London, S W 1, England, Secretary

Inter American Congress of Radiology, Shoreham Hotel, Washington D C, U S A, April 24 29, 1955 Dr Eugene P Pendergrass, 3400 Spruce St, Philadelphia 4, Pa, U S A, Secretary General

Inter American Session, American College of Surgeons, Universidad Mayor de San Marcos de Lima, Lima, Peru, S A, Jan 11-14, 1955 Dr Michael L Mason, 40 East Erie St, Chicago 11, Ill, U S A, Secretary

International Anatomical Congress, Paris, France, July 25 30 1955 Prof Gaston Cordier, 45, rue des Saints Pères, Paris 6ᵉ, France, Secretary-General

International Congress of Biochemistry, Brussels, Belgium, Aug 1 6, 1955 Prof C Liebecq, 17 Place Delcour, Liege, Belgium, Secretary-General

International Congress of Comparative Pathology, Lausanne, Switzerland, May 26-31, 1955 Professor Hauduroy, 19 rue Cesar Roux, Lausanne, Switzerland, Secretary-General

International Congress of Criminology, London, England, Sept 4 10, 1955 For information write Dr Carroll, 28 Weymouth St, London, W 1, England

International Congress of Military Medicine and Pharmacy, Luxemburg Luxemburg Nov 7 12, 1954 Colonel A R Vernengo, Direcion General de Sanidad Militar, Pozos 2045, Buenos Aires, Argentina, S A, Secretary General

International Congress of Plastic Surgery, Stockholm Sweden Aug 1-4, 1955, and Uppsala Sweden, Aug 5, 1955 Dr Tord Skoog Uppsala, Sweden, General Secretary

International Hospital Congress, Lucerne Switzerland, May 30-June 3, 1955 Capt J E Stone, International Hospital Federation, 10 Old Jewry, London, E C 2, England, Hon Secretary

International Surgical Congress, Geneva, Switzerland, May 23 26, 1955 Dr Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U S A Secretary-General

International Symposium on Cardiovascular Surgery, Henry Ford Hospital Detroit Michigan U S A March 17 19 1955 Dr Conrad R Lam 2799 West Grand Boulevard Detroit 2, Michigan, U S A, Chairman of Program Committee

Japan Medical Congress Kyoto University and Kyoto Prefectural Medical College Kyoto Japan, April 1 5, 1955 Dr Mitsuharu Goto, University Hospital, Medical Faculty of Kyoto University, Kyoto, Japan, Secretary-General

Latin American Congress of Physical Medicine, Lima Peru, S A, Feb 14 19 1955 Dr Cassius Lopez de Victoria, 176 East 71st St, New York 21, N Y, U S A, Executive Director

Middle East Medical Assembly, Campus of American University of Beirut, Beirut, Lebanon, April 22 24, 1955 Dr John L Wilson American University of Beirut, Beirut Lebanon, Chairman

National Congress of Tuberculosis and Silicosis, Mexico, D F, Mexico Jan 23 29, 1955 Dr Jose Nava Gonzalez, Balderas 32 312, Ap Postal 7267, Mexico D F, Mexico, Secretary General

Neuroradiologic Symposium, London, England, Sept 13-17, 1955 Dr R D Hoare, National Hospital, Queen Square, London, W C 1, England, Secretary.

Pan American Academy of General Practice, Lima, Peru, S A, Feb 11 25, 1955 Dr Arturo Martinez, 54 East 72nd St, New York 21, N Y, U. S A, Secretary

EXAMINATIONS AND LICENSURE

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners *Parts I and II in 1955* Feb 1-2, April 19 20 (Part II only), June 21-22, Sept 6-7 (Part I only) Candidates may file applications at any time but the National Board must receive them at least six weeks before the date of the examination New candidates should apply by formal registration, registered candidates should notify the board by letter and forward their fees Exec Sec, Dr John B Hubbard, 133 South 36th St, Philadelphia 4.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology *Written* July 15 Final date for filing applications is Jan 15 *Oral* Colorado Springs, March 27 31 New York City, Oct 23 27. Sec, Dr Curtiss B Hickcox, 80 Seymour St, Hartford 15

American Board of Internal Medicine *Oral* New Orleans, Feb 1-4, Philadelphia, May 4 5, Washington, D C, May 6-7, Portland, Ore, Sept 14 16, Chicago, Nov 30-Dec 1 Exec Sec, Dr William A Werrell, 1 West Main St, Madison 3, Wis

American Board of Neurological Surgery *Oral* New Haven, November Final date for filing application is Nov 1 Sec, Dr. Leonard T. Furlow, 600 S Kingshighway, St Louis 10

American Board of Obstetrics and Gynecology *Part I* Various centers, Feb 4 *Part II*, Chicago, May 12 20 Deadline for receipt of applications is Oct 1 Sec, Dr Robert L Faulkner, 2105 Adelbert Road, Cleveland 6

American Board of Ophthalmology *Practical examinations, 1954* New York City, Dec 5 9 *Written 1955* Various cities, Jan 24-25 Final date for filing application was July 1, 1954 *Practical examinations, 1955* Philadelphia, June 10-15, Chicago, Oct 9 14 Sec, Dr Edwin B Dunphy, 56 Ivie Road, Cape Cottage, Maine

American Board of Orthopedic Surgery *Part I* Various locations, spring *Part II, Oral and Written* Los Angeles, Jan 26-28 Final date for filing applications for Part II was Aug 15 Sec, Dr Harold A Sofield, 122 South Michigan Ave, Chicago 3, Illinois

American Board of Otolaryngology Richmond, Va, March 6-10, 1955 Sec, Dr Dean M Lierle, University Hospital, Iowa City

American Board of Pathology Miami Nov 29 30-Dec 1 Sec, Dr William B Wartman, 303 E Chicago Ave, Chicago 11

American Board of Pediatrics *Oral* New Haven, Dec 3 5 Ex Sec, Dr John McK Mitchell, 6 Cushman Road, Rosemont, Pa

American Board of Physical Medicine and Rehabilitation Philadelphia June 5-6 The final date for filing applications is March 1 Sec, Dr Earl C Elkins, 30 N Michigan Ave, Chicago 2

American Board of Plastic Surgery May, 1955 Final date for filing case reports is Jan 1 Corres Sec, Miss Estelle E Hillerich, 4647 Pershing Ave, St Louis 8

American Board of Preventive Medicine *Parts I and II* Buffalo, Oct 9 11 Final date for filing applications was July 15 Sec, Dr Ernest L Stebbins, 615 N Wolfe St, Baltimore

American Board of Psychiatry and Neurology New York, Dec 13 14, New Orleans, Feb 28 March 1, 1955, San Francisco, mid October, 1955, New York City, December, 1955 Sec, Dr David A Boyd, 102-110 Second Ave S W, Rochester, Minnesota

American Board of Surgery *Part I* Oct 26, March 30 *Part II* Chicago, Oct 18, New York City, Nov 11-12, Kansas City, Kan, Dec 13-14, New Orleans, Jan 17 18, Baltimore, Feb 14-15, Cincinnati March 14-15, San Francisco April 18 19, Boston May 16-17, Philadelphia, June 13 14 Sec, Dr John B Flick, 225 S Fifteenth St, Philadelphia 2

The Board of Thoracic Surgery *Written* February Final date for filing applications is Jan 1 Sec, Dr Wm M Tuttle, 1151 Taylor Ave, Detroit 2

DEATHS

McKendree, Charles Alphonso ⊕ New York City; born in Manchester, N. H., in 1886; Dartmouth Medical School, Hanover, N. H., 1910; instructor in neurology at Columbia University College of Physicians and Surgeons, later advancing to clinical professor of neurology, which position he held until 1948; formerly associate professor of neurology at the New York Post Graduate Medical School and Hospital; specialist certified by the American Board of Psychiatry and Neurology; member of the American Neurological Association, American Psychiatric Association, and the Association for Research in Nervous and Mental Disease; fellow of the American College of Physicians and the New York Academy of Medicine; past president of the New York Neurological Society; served during World War II; for many years attending neurologist at the Neurological Institute and the Vanderbilt Clinic; consulting neurologist, Roosevelt Hospital in New York, Goshen (N. Y.) Hospital, Greenwich (Conn.) Hospital, North Hudson Hospital in Weehawken, N. J., St. Luke's Hospital in Newburgh, N. Y., and the New Jersey Orthopaedic Hospital in Orange; author of "Neurological Examination"; died in Greenwich, Conn., Sept. 10, aged 67, of sarcomatosis.

Bogart, Arthur Henry De Blois ⊕ Brooklyn; born May 14, 1868; University of the City of New York Medical Department, 1893; an Associate Fellow of the American Medical Association; fellow of the American College of Surgeons, of which he was one of the founders; past president of the Kings County Medical Society; during the Spanish-American War served as a surgeon and held the rank of major in the 14th Regiment, New York National Guard; during World War I chairman of the Medical Advisory Board of Selective Service; during World War II chairman of the Selective Service Appeals Board; formerly chairman of the medical board and consulting surgeon at the Methodist Hospital, where he died Sept. 3, aged 86, of heart disease.

Miles, Walter Howard ⊕ Oklahoma City, Okla.; born in 1891; University of Oklahoma School of Medicine, Oklahoma City, 1918; assistant professor of preventive medicine and public health at his alma mater; specialist certified by the American Board of Preventive Medicine; member of the American Public Health Association; past president of the Oklahoma State Medical Association and the Oklahoma County Medical Society; served during World War II; director of the city health department; died in St. Anthony Hospital Aug. 31, aged 62, of acute myocardial infarction and hypertension.

Hibbitt, Charles William ⊕ Louisville, Ky.; Louisville Medical College, 1897; an Associate Fellow of the American Medical Association, serving as a member of the House of Delegates, 1933-1934; fellow of the American College of Surgeons; past vice-president of the Kentucky State Medical Association; professor emeritus of gynecology and obstetrics at the University of Louisville School of Medicine; veteran of Spanish-American War and World War I; affiliated with Kentucky Baptist Hospital, where he died Aug. 26, aged 83, of coronary thrombosis.

Adams, Edward Everett ⊕ Boston; Boston University School of Medicine, 1937; certified by the National Board of Medical Examiners; service with the U. S. Public Health Service terminated July 13, 1946; on the staff of the Faulkner Hospital, where he died Aug. 12, aged 43, of myocarditis.

Appelle, C. George ⊕ Champaign, Ill.; University of Illinois College of Medicine, Chicago, 1916; past president of the Champaign County Medical Society; fellow of the American College of Surgeons; served during World War I; on the staff of the Burnham City Hospital; died in the Carle Memorial Hospital in Urbana, Aug. 23, aged 70, of carcinoma of the mouth with metastases.

Belknap, Robert Willis ⊕ Damariscotta, Maine; Harvard Medical School, Boston, 1917; president of the Maine Medical Association and served as councilor for the Third District; past president of the Lincoln-Sagadahoc Counties Medical Society; at one time an officer in the regular navy; on the staff of the Miles Memorial Hospital; died Aug. 11, aged 63, of coronary occlusion.

Bethards, Paul Ernest ⊕ Toledo, Ohio; Toledo Medical College, 1900; died in the Toledo Hospital Aug. 26, aged 77, of leukemia.

Bonney, William Wesley ⊕ Perkasie, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1934; on the staffs of the Grand View Hospital in Sellersville, and the Quakertown Community Hospital, Quakertown; physician for the board of health of Perkasie; died Aug. 20, aged 49, of acute myocardial infarction.

Brannick, Catherine Elizabeth, Middleboro, Mass.; Tufts College Medical School, Boston, 1916; at one time examining physician for the Vocational Guidance Bureau of the Board of Education in Chicago, where she was associated with the Chicago Juvenile Court; died in St. Luke's Hospital Aug. 1, aged 76, of cerebral hemorrhage.

Burke, Emmett Stanley, Scranton, Pa.; Georgetown University School of Medicine, Washington, D. C., 1921; served during World War I; died in the Mercy Hospital Aug. 14, aged 58, of cerebral vascular accident.

Capowski, William Vladimir, Milton, N. Y.; Georgetown University School of Medicine, Washington, D. C., 1937; certified by the National Board of Medical Examiners; affiliated with the Vassar Brothers Hospital in Poughkeepsie; died Aug. 4, aged 45, of coronary thrombosis.

Carnell, Fred Caldwell ⊕ Trezevant, Tenn.; University of Nashville Medical Department, 1909; chairman of the city school board; died Aug. 8, aged 78, of a ruptured appendix.

Clap, Edmund Wright ⊕ Norwich, Vt.; Harvard Medical School, Boston, 1898; member of the Massachusetts Medical Society and the New England Ophthalmological Society; served on the faculty of his alma mater; formerly practiced in Boston, where he was consultant in ophthalmology at the Massachusetts Eye and Ear Infirmary, and on the staff of the House of the Good Samaritan; died in Enfield, N. H., Aug. 4, aged 84, of coronary thrombosis.

Cohen, Harold Aaron, New York City; Columbia University College of Physicians and Surgeons, New York, 1910; served on the staffs of the Mount Sinai and Lying-In hospitals; died Sept. 3, aged 68, of heart disease.

Evans, James A., Augusta, Ga.; Meharry Medical College, Nashville, Tenn., 1915; served overseas during World War I; died Aug. 14, aged 63, of cerebral thrombosis, hypertension, and arteriosclerosis.

Falvello, Nicholas Antonio ⊕ Morristown, N. J.; Albany (N. Y.) Medical College, 1914; formerly affiliated with the Overlook Hospital in Summit, N. J.; died in Miami, Fla., Aug. 24, aged 69, of bleeding duodenal peptic ulcer.

Fitzpatrick, Dennis Francis ⊕ Iowa City, Iowa; State University of Iowa College of Medicine, Iowa City, 1901; city health officer; local surgeon for the Rock Island Lines Railway; on the staff of Mercy Hospital; died Aug. 26, aged 78, of heart failure.

Foster, Linus Joseph ⊕ Detroit; University of Michigan Medical School, Ann Arbor, 1920; professor of clinical neurology at the Wayne University College of Medicine; member of the Central Neuropsychiatric Association; past president of the Detroit Medical Club and the Michigan Society of Neurology and Psychiatry; attending neurologist at Harper and Receiving hospitals and on the staff of Highland Park General, Woman's, St. Joseph's, and Herman Kiefer hospitals; died in the Harper Hospital Aug. 10, aged 59, of cancer.

⊕ Indicates Member of the American Medical Association.

Garrett, Henry Grady ⊕ Dallas, Texas; Baylor University College of Medicine, Dallas, 1919; member of the American Academy of General Practice; died June 28, aged 63, of myocardial infarction.

Gathings, Theodore Roosevelt ⊕ New York City; Meharry Medical College, Nashville. Tenn., 1935; chief of clinics at the Bronx Hospital; died Aug. 13, aged 50.

Hammond, James Felton ⊕ St. Paul; McGill University Faculty of Medicine, Montreal, Canada, 1906; served as instructor in obstetrics and gynecology at the University of Minnesota Medical School, Minneapolis; affiliated with Ancker, St. Luke's, and Miller hospitals; died Aug. 10, aged 72.

Hensen, Henry Mathies ⊕ Baltimore; Johns Hopkins University School of Medicine, Baltimore, 1933; fellow of the American College of Physicians; served as major in the Medical Corps of the Officers Reserve Corps; on the staff of the Hospital for Women; accidentally drowned at Ocean City, Md., July 17, aged 50.

Jones, Donald Emerson ⊕ Captain, U. S. Army, retired, Norvelt, Pa.; Western Reserve University School of Medicine, Cleveland, 1939; served during World War II; entered the Medical Corps, U. S. Army, in 1947 and retired March 31, 1949, for disability in line of duty; died in August, aged 39.

Lilga, Harris Vincent ⊕ Petoskey, Mich.; University of Nebraska College of Medicine, Omaha, 1935; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; served in the Pacific theater during World War II; attached to the Burns Clinic; accidentally drowned on Walloon Lake Aug. 10, aged 44.

Maddox, David Campbell, Rives, Tenn.; Vanderbilt University School of Medicine, Nashville, 1907; died Aug. 4, aged 74, of coronary thrombosis.

Morton, Heber Jones ⊕ Stuarts Draft, Va.; University of Georgia Medical Department, Augusta, 1909; past president of the Augusta County Medical Society; served in France during World War I; died in the Memorial Hospital, New York City, Aug. 10, aged 69.

Neville, Lester ⊕ Dillard, Ga.; Atlanta School of Medicine, 1911; on the staff of the Rabun County Maternity Hospital in Clayton, where he was chairman of the county board of health; died July 2, aged 70, of heart failure.

Niemann, Arthur Christian, Milwaukee; Milwaukee Medical College, 1908; died in Malta, Mont., June 21, aged 67, of cerebral hemorrhage.

Pontery, Herbert B. ⊕ Jersey City, N. J.; Eclectic Medical College, Cincinnati, 1924; shot and killed Aug. 7, aged 59.

Pruitt, Elihu Posey ⊕ Birmingham, Ala.; Atlanta College of Physicians and Surgeons, 1905; formerly medical director of the Alabama State Prison and physician in charge of the Kilby Prison; on the staff of the South Highlands Infirmary; died in the Hillcrest Sanitarium recently, aged 76, of arteriosclerotic heart disease.

Ramirez, Jorge Guillermo, Washington, D. C.; Georgetown University School of Medicine, Washington, 1934; formerly minister of labor, public health, and social welfare in Panama; died in the Georgetown University Hospital Aug. 3, aged 43.

Roberts, Robert Almer ⊕ San Antonio, Texas; Southern Methodist University Medical Department, Dallas, 1911; member of the American Academy of General Practice; died June 12, aged 69.

Rotnem, Orville Morris ⊕ Minneapolis; University of Minnesota Medical School, Minneapolis, 1944; formerly a resident at the University Hospitals in Iowa City; died in St. Mary's Hospital, Rochester, Minn., July 25, aged 35, of injuries received in an automobile accident.

Roughan, Charles Michael ⊕ Lowell, Mass.; Tufts College Medical School, Boston, 1906; past president of the Middlesex North District Medical Society; served as school physician; affiliated with St. John's Hospital; died July 11, aged 74, of cerebral hemorrhage and arteriosclerosis.

Salerni, Nicola B., Indianapolis; Loyola University School of Medicine, Chicago, 1918; died in the Logansport State Hospital in Logansport June 15, aged 69, of myocardial infarction.

Sharp, Jack Weston, Dallas, Texas; Baylor University College of Medicine, Dallas, 1939; formerly field consultant for the state health department; at one time medical director of the Riverside Hospital in Waco; on the staff of St. Paul's Hospital; died July 27, aged 38.

Shoemyen, Ernest, New Britain, Conn.; Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest, Hungary, 1919; died Aug. 13, aged 58, of tuberculosis.

Skrzycki, Stephen Stanislaus ⊕ Hamtramck, Mich.; Temple University School of Medicine, Philadelphia, 1917; fellow of the American College of Surgeons; mayor of the city of Hamtramck for five consecutive terms from 1942 to 1952; member of the staff of St. Francis Hospital in Hamtramck since its founding; died in the Harper Hospital in Detroit, Aug. 5, aged 61, of carcinoma of the tonsil.

Snell, Frank H., Lansing, Mich.; Chicago Homeopathic Medical College, 1896; died Aug. 13, aged 87, of arteriosclerosis.

Summers, Edmund ⊕ Mattoon, Ill.; Kentucky School of Medicine, Louisville, 1898; died Aug. 7, aged 82.

Taylor, Lewis, Greenfield, Mass.; Middlesex College of Medicine and Surgery, Cambridge, 1926; affiliated with the Franklin County Public Hospital, Greenfield, and the Farren Memorial Hospital in Montague City, where he died Aug. 12, aged 68, of coronary thrombosis.

Wilson, Walter John Sr. ⊕ Detroit; Detroit College of Medicine, 1897; emeritus professor of clinical medicine at Wayne University College of Medicine; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; member of the House of Delegates of the American Medical Association in 1919, 1921, and 1922; consultant in medicine at St. Mary's Hospital, where he was past president of the medical staff and a member of its executive staff; died July 18, aged 78.

Wolfson, Victor Hugo ⊕ Mount Clemens, Mich.; Detroit College of Medicine, 1909; physician and surgeon for the Michigan State Police and Macomb County Sheriff's Department; on the staff of the Grace Hospital, where he died Aug. 15, aged 68, of carcinoma of the pancreas.

Wood, Harold Barrett ⊕ Wind Ridge, Pa.; University of Pittsburgh School of Medicine, 1910; affiliated with Greene County Memorial Hospital in Waynesburg; died Aug. 14, aged 70, of coronary occlusion.

Young, Richard Claude ⊕ Arkansas City, Kan.; Keokuk (Iowa) Medical College, 1898; for many years member of the board of education; at one time mayor of Chase; died in Sand Springs, Okla., Sept. 4, aged 79, of coronary occlusion.

Zetena, Dominick Francis ⊕ New York City; University and Bellevue Hospital Medical College, New York City, 1924; fellow of the American College of Surgeons; affiliated with St. Vincent's, Parkway, and Harlem hospitals; died Aug. 26, aged 57, of coronary thrombosis.

DIED WHILE IN MILITARY SERVICE

Brewster, Richard Ellsworth, Lieut. (j.g.) U. S. Navy, Norfolk, Va.; University of Kansas School of Medicine, Kansas City, Kan., 1952; appointed a lieutenant (j.g.), Medical Corps, U. S. Naval Reserve, in 1952; transferred to the medical corps of the regular navy in 1953; awaiting transfer to the Naval Hospital, National Naval Medical Center, Bethesda, Md., for residency training at the time of his death; died in the Naval Hospital, Portsmouth, Aug. 22, aged 26, of acute anterior bulbar poliomyelitis.

FOREIGN LETTERS

AUSTRIA

Poisoning with Insecticide.—At the meeting of the Society of Physicians in Vienna on June 11, F. X. Mayer reported on poisoning with parathion (E605). Diethyl-*p*-nitrophenyl-thiophosphoric acid ester (diethylester) and the corresponding dimethyl ester are the active ingredients of the insecticides derived from thiophosphoric acid ester. The first of these two, present in parathion in concentrations up to 50%, is a brown oily liquid with a characteristic garlic-like odor and a boiling point of 174 C. The second substance, present in concentrations up to 2% in the spray preparations, is well crystallized, with a melting point of 33.5 C. The lethal dose for rats on internal administration is 6.4 mg. of the diethyl ester and 15 to 20 mg. of the dimethyl ester per kilogram of body weight. In man about the same proportions may be lethal. From 1 to 2 cc. of the concentrate taken by mouth may cause death.

Autopsy does not reveal any anatomic changes characteristic of poisoning. Mild hyperemia of the gastric mucosa and mild pulmonary edema are observed. Occasionally a garlic-like odor of the cadaver is noted, but this may also be caused by the ingestion of food spiced with garlic. The presence of such an insecticide, however, may be indicated by the simultaneous death of large numbers of flies, which is frequently observed in the course of autopsy. These esters may be condensed up to 70% from acidulated gastric contents or blood by steam distillation without decomposing. The esters may then be shown in the distillate by chemical means. Differentiation between an intoxication by the diethyl or dimethyl ester may be made by measuring the absorption of infrared light. The poison does not undergo chemical change in the body.

Dr. V. Lachnit had observed poisoning produced by thiophosphoric acid as an occupational hazard. The first symptoms of the so-called chronic poisoning consist of an increased secretion of the salivary and sweat glands and the presence of miosis. Gastrointestinal symptoms owing to the increased tonus in the gastrointestinal tract may occur later. An early symptom in some patients was a mild nausea produced by smoking. Medical rophylaxis consists of the determination of plasma cholinesterase ivity in the persons exposed to the risk of poisoning, since his activity will be reduced by the increased taking up of alkyl phosphates. Unfortunately this determination is difficult.

ENGLAND

Declining Tuberculosis Mortality.—An editorial in the *British Medical Journal* of Aug. 14, 1954, draws attention to the reduction of deaths from tuberculosis and is based on studies in London by Benjamin and in Glasgow by Stein that show that the death rate in 1950 of men in unskilled occupations and of their wives still remained twice as high as for those in professional occupations. No great changes of mortality from tuberculosis occurred in Britain between the end of the Stuart period and the beginning of the 19th century, and in London about one death in five was due to this disease. About the middle of the century, when it was established that the disease was due to a specific infective agent, deaths in England and Wales averaged 65,000 per year in a population of less than 20 million. Since then, apart from temporary setbacks during the two world wars, improvement has been continuous, and by 1948, with the population more than doubled, deaths from tuberculosis numbered only 22,000. Some of the credit from this great decline can be attributed to treatment and some to the isolation of infectious patients, but the main factors have been improvement in nutrition, housing, and working conditions.

Since 1948, treatment with streptomycin, *p*-aminosalicylic acid, and derivatives of isonicotinic acid has converted the long and steady retreat of tuberculosis deaths to a steady rout, and in 1953 deaths in England and Wales numbered only 9,000. In Scotland, where mortality continued high for some years after World War II, similar improvement has now occurred, and Ruys, McDonald, and Springett have shown that this experience has been shared throughout Western Europe. The degree of improvement has been remarkably uniform, and in many countries only two-thirds as many people died from tuberculosis in 1952 as in 1950. In England and Wales the death rate per 100,000 fell from 37 to 24; in Scotland from 54 to 31; in Northern Ireland from 48 to 30; in the Irish Republic from 78 to 54; and even in Portugal, outstanding for its high mortality, the rate fell from 142 to 96. The death rate in the United States during the same period declined from 27 to 16.

The sex-age pattern of mortality in England and Wales presents a number of unexplained features. In women, the highest rates are among young adults and have remained so for many years. In men the highest rates a century ago were in young adults, but since then there has been a gradual advance in the peak age, which is now about 60. This has revived interest in the "cohort" method of studying tuberculosis mortality rates, and Springett has suggested that the high death rates of older men derive less from contemporary circumstances than from the adverse conditions that affected this cohort of men when they were young. Another departure from the conventional approach has been adopted by Logan and Benjamin in the concept of mortality measured not in numbers of deaths but in numbers of potential years of life lost. In 1952 tuberculosis accounted for 2.1% of all deaths but for 5.7% of years of working life lost.

Though mortality has been declining there has been no corresponding diminution in numbers of new cases of tuberculosis reported. The lowest annual total of reported cases was 46,000 in 1939. This rose to 51,000 in 1941 and was 48,000 in 1952. It is believed that these high rates are the result of more effective and earlier case finding; but with the numbers of tuberculosis survivors now increasing so fast year by year the possibility cannot be ignored that the proportion of potential disseminators of infection may be rising despite the fact that in many cases the sputum becomes free of tubercle bacilli under chemotherapy.

Medical Responsibility.—The *British Medical Journal* of July 31 in reviewing a recent Scottish court case stated that the doctrine that a physician is solely responsible for the patient in his charge seems not only self-evident but fundamental to good medicine. It matters not whether the physician is employed by a hospital, a local authority or an industrial concern; he recognizes that when patients are under his care his duty is to those patients, not to his employer, and that the relationship between physician and patient is a personal one that admits of no third party intruding except in consultation. Now, by a decision of the first division of the Court of Sessions in Scotland, boards of management of Health Service hospitals are made vicariously responsible for the negligence of resident members of medical staffs in the performance of their professional duties. The court had two cases of alleged negligence by resident physicians, and the hospital boards had been sued for damages as well as the physicians. The hospital authorities had previously been absolved in the lower courts from vicarious responsibility. Delivering the present judgment (with which his two colleagues on the bench concurred), Lord Cooper posed these crucial questions: "Are medical personnel in a class apart from all other skilled persons? Is a distinction to be drawn between skilled persons who belong to a 'profession' and those who do not?"

Lord Cooper did not give a direct answer to them, but the argument that he developed will not evoke much sympathy among medical men. The essence of the matter, he said, was that those physicians were full-time salaried employees pro-

---

The items in these letters are contributed by regular correspondents in the various foreign countries.

hibited from private practice, normally resident on the hospital premises, and subject to a measure of disciplinary control. They were subject now, he continued, as in the past, "in the exercise of their professional judgment and skill only to the supervision and the direction of the medical hierarchy under whom they were assigned duties." Lord Cooper then turned to the relationship between the hospitals and the patients created by the Health Service Act and concluded that the older Scottish decisions were outmoded. He dwelt in his judgment on a new obligation of the state to treat the patient and not merely to make arrangements for his treatment. To physicians the meaning of these words must be difficult to interpret, for how can the state treat patients? The real answer to Lord Cooper's questions is that physicians are indeed different from other skilled persons in that they are personally responsible for the health and life of the patients in their care, and neither the state nor any other employer can take over that responsibility without damaging the patient's interests.

The Guillebaud Committee and the Health Officers.—The Guillebaud Committee was set up by the Minister of Health to suggest economies in the operation of the National Health Service without undermining its usefulness. A memorandum from the Society of Medical Officers of Health has been published in *Public Health* for August, 1954. Many of the recommendations suggest that if they are adopted, they would result in economy, though it is not always easy to see how this will be achieved just by switching the administration of some of the services from one authority to another. According to the memorandum the cost of the National Health Service is bound to rise, particularly on the hospital side, unless steps are taken to unify the service and to change it from being primarily a service for the relief of sickness to a real health service. Before great changes in the organization of the health services are made, a decision should be reached on what is likely to be the best form of administration. All changes should then be made in the direction of this ideal. There should be a complete reorganization of the health services to provide a unified local administration of all three sections under elected representative bodies. Since this would require reorganization of the local government, it is unlikely to be achieved in the near future.

The duties of the Ministry of Health should be advisory and supervisory and not executive. Simplification of administration of the hospital services could save money, and some of the saving should be used to finance public health measures that would lead in turn to further savings by reducing the need for therapeutic services. Thus a cycle of efficiency, progress, and economy would be substituted for the present vicious circle of overlapping administration and ever-increasing cost. Many patients with chronic illness could be nursed at home if the relatives were given adequate help, and the extended provision of home nurses and home helps by local health authorities would obviate the need for some of the beds used at present. This would result in a reduction in the number of beds. Social welfare departments are redundant, and efficiency and economy could be achieved by placing all welfare administration in the hands of local health officers. This arrangement has been made in many areas and is said to operate satisfactorily. Children's departments could likewise be absorbed by public health departments.

Voluntary Contributions to Hospitals.—The *British Medical Journal* for Aug. 21 comments on the continued usefulness of King Edward's Hospital Fund for London. The establishment of the National Health Service has done much to reduce voluntary contributions. King Edward's Hospital Fund for London now derives only one-tenth of its ordinary income from subscriptions and donations; nine-tenths is income from investments that are a legacy of former benevolence dating back to Edwardian times. The fund has never aimed at a high subscription income, having refrained from active competition with hospitals in the search for subscribers; but, although a number of staunch supporters, headed by the Queen, still maintain their subscriptions, the list has diminished materially. The voluntary spirit is not easily extinguished, however, and the report of the fund for 1953 shows a notable upswing in donations.

Grants have been made by the fund during the past year to a number of improvement schemes, from $33,800 for the rehabilitation of one floor of the geriatric unit at West Middlesex Hospital to $140 for putting in a new gas stove at a convalescent home in Broadstairs. The projects have included such things as a new cerebral palsy center at a children's hospital, the renovation of a villa for a nurse-training school, and the provision of such features as gardens, verandas, radios, and diet kitchens at many other places. One of the special activities of the fund is the running of London's well-known emergency bed service. The fund also supports convalescent and recovery homes, many of which would be closed were it not for its aid. It encourages nurse recruitment and training. Its catering service is one of its most useful activities and includes the planning of kitchens, advice on food preparation, investigation of food costs, and arrangement of courses for catering officers. Of the 12 homes for the aged sick to be set up under a scheme inaugurated in 1949, the 10th is being opened this year.

Care for Aged.—Family loyalty is as strong as ever in the welfare state according to "Over Seventy," a survey of 100 persons over 70 years of age living in Hammersmith, published by the National Council of Social Service. Older persons are not neglected by their children and other relatives. Daughters help daily with cooking and washing; sons call regularly after work; and nephews, nieces, and neighbors assist. The chairman of the National Old People's Welfare Committee said: "The greatest single hardship suffered by the old is loneliness." Of the older persons interviewed, 62 were in close touch with their families, 18 had no family living, 2 had no knowledge of their family, and 4 no contact. Many more would like visitors. "Not even the vicar calls now," said one. The lack of parochial visiting was mentioned by several. Budgets disclosed that nothing was available for luxuries. Some of the older persons keep on smoking by eating less. The need of a pipe is felt less keenly by a man who has a wife to lessen his loneliness. Beer is considered less important than tobacco.

The aged persons wish that life could be a little easier, but they accept their lot cheerfully. Reading is their favorite occupation. A man of 82, who could read better by electric light, dozes during the day and stays up till 2 or 3 a. m. to read. More would like to listen to the radio, the second most popular diversion, but cannot afford a set. Many persons kept pets, preferring their companionship to the extra food for themselves that money spent on the pets could buy.

Sulfur Chief Cause of Fog Deaths.—Atmospheric pollution, mainly by oxides of sulfur, caused the death of nearly 4,000 people in the fog of December, 1952, according to a Ministry of Health report. The fog blanketed London for four days. While the available evidence does not incriminate any one constituent of the fog, it was concluded that the excessive mortality and increased incidence of respiratory illness during and immediately after the fog were the result of irritation of the respiratory tract by contaminants of the fog, probably those derived from the combustion of coal and its products. The smog took its greatest toll among persons already suffering from chronic respiratory or cardiovascular disorders. Of those who died, 90% were over 45 years of age, and about 65% were over 65. Deaths from bronchitis rose in one week from 76 to 704. There was a marked increase in sudden deaths. A high proportion of persons who died were found dead in bed. This report stresses the increase in sulfur dioxide in the atmosphere during the fog. Its harmful effects were probably reinforced by sulfur trioxide dissolved as sulfuric acid in fog droplets. To most normally healthy persons the fog was little more than a nuisance. There was nothing to suggest that it produced a new clinical or pathological entity.

Rules for Clean Food.—A 46 point "Caterers' Charter" for cleaner food handling has been sent by the National Caterers' Federation to the Minister of Food, with the suggestion that its provisions should be made legally enforceable. The charter is the federation's answer to its critics in the House of Commons. During the second reading of the Food and Drugs (Amendment) Bill it was said that trade interests were concerned with protecting dirty cafes. [illegible] proposals include: 1.

All persons handling food should possess a personal hygiene certificate issued by a health officer and renewed every three months. 2. Washing facilities in catering establishments should include hot water containing a "correct dosage" of sterilizing agent or detergent. 3. Unhygienic habits, such as blowing into paper bags or licking fingers and smoking or snuff-taking while handling food, should be prohibited. 4. Local authorities should be responsible for enforcing the regulations. 5. Clean food committees, representing the local authority, the catering trade, and consumers, should have powers of arbitration. 6. A national publicity committee on hygiene should be set up by the Minister of Food.

Legal Status of Surgeon's Health.—A woman who alleged that a thyroidectomy was performed on her in 1944 by a surgeon who was unfit for the task because he was suffering from cancer of the lung claimed damages against the Ministry of Health. She claimed that the operation had left her apathetic and unable to bear children and that her voice had become a mixture between high pitched and husky. At operation, both her recurrent laryngeal nerves were cut or damaged. Subsequently, she had persistent difficulty in breathing that was so severe that some years later when she was pregnant, to avoid risk of life, she was advised to have the pregnancy terminated and to be sterilized. The surgeon died soon after performing the operation, but at the time of operation he knew that he had cancer of the lung. The Ministry, in defense, denied negligence or lack of skill or that the surgeon was a servant of the hospital. The patient's counsel argued that the deep x-ray therapy the surgeon had taken had made him ill but the Ministry said that the state of the surgeon's health did not detract from his professional skill and fitness to perform the operation. The judge upheld the Ministry.

Lethal Fumes from Jam.—Carbon monoxide poisoning caused by charring jam was the unusual cause of death in a case that came before the coroner. A spinster, aged 65, was found lying dead on the kitchen floor of her house by the police. The room was full of fumes, and on one of the lighted gas burners stood a large bowl covered by a wooden lid. The bowl had contained jam, but it had boiled over and burned dry. The autopsy showed that the woman had inhaled a large amount of carbon monoxide and that this was the immediate cause of her death. The appearance suggested also that she might have had a coronary occlusion causing her to lose consciousness. Tests by the assistant chief physicist to the South-eastern Gas Board showed that carbon monoxide was rapidly produced by carbonizing sugar, with the production of a lethal atmosphere. Returning a verdict of accidental death, the coroner emphasized that there was no risk of carbon monoxide being produced in this way in the normal process of jam making, but only when it went to the point of charring.

The Common Cold.—There is hope of discovering a cure for the common cold according to a report of the Medical Research Council for 1952-1953 published in August. The finding of the Common Cold Research Unit, Salisbury, that the virus could be cultivated in human embryonic lung tissue was an encouraging advance. Should they now find a way of detecting activity of the virus in the cultures by some laboratory test not requiring the use of volunteers the way would be open for bringing this infection into the category of those amenable to attack in the laboratory. The report states that, since infections due to bacteria are now controlled and cured by sulfonamides and antibiotics, the attack on disease has been switched to measures against the viruses.

Death of Sir Stanley Hewett.—Sir Stanley Hewett, who died at the age of 74, was for more than 40 years a medical adviser to the royal family. During the long illness of King George V in 1928 he was in constant attendance. In 1936 he was a signatory of the bulletin announcing the King's death. He was in charge of the operation for appendicitis on the Princess Royal in 1953. Educated at Cambridge, he held various appointments at St. Thomas Hospital and West London Hospital and was knighted in 1921.

FRANCE

Causes of Death in 1952-1953.—According to the publications of the National Institute of Statistics, the general mortality has decreased greatly since 1946. The average rate was about 12.5 per 1,000 inhabitants in 1952-1953. Tuberculosis caused 18,637 deaths in 1952 against 15,437 in 1953. At the beginning of the 20th century the annual number of deaths was close to 100,000. Infectious diseases caused 7,740 deaths in 1952 against 8,046 in 1953. This increase was due to influenza. Malignant tumors caused 74,478 deaths in 1952 against 72,915 in 1953; here the death rate in women was higher than that in men. Deaths from nonmalignant tumors are increasing; 4,022 in 1952 against 4,444 in 1953. Those from leukemia are also increasing; 1,879 in 1952 against 2,034 in 1953. Deaths from alcoholism increased from 2,832 in 1952 to 3,748 in 1953. Those from diabetes increased from 4,852 in 1952 to 4,861 in 1953. The deaths caused by intracranial vascular lesions have increased from 59,528 in 1952 to 60,911 in 1953. Deaths from heart diseases increased from 88,953 in 1952 to 94,488 in 1953; those from diseases of the digestive tract increased from 24,196 in 1952 to 25,714 in 1953. This was largely due to an increase in deaths from cirrhosis of the liver. Deaths from nephritis decreased from 7,384 in 1952 to 5,726 in 1953. Suicides decreased from 6,542 in 1952 to 6,362 in 1953.

In 1953 there were 38 deaths of babies less than one year old per 1,000 live births. A century ago the rate was 200. France holds 16th place in the international statistics for mortality of premature infants. This mortality varies with social level, the conditions of the sanitary system, and the adequacy of housing. In the years 1950 and 1951, for instance, this rate was 16 per 1,000 for the legitimate children of the dentists, 17 for those of chemists, 21 for those of physicians, 23 for those of professors, 26 for those of teachers, 59 for those of woodcutters, 74 for those of unskilled laborers, and 80 for those of miners.

Pharmacology and Old Age.—In the *Le concours medical* of June 12, 1954, H. Destem reported on the effects of drugs on older persons, the functional power of whose tissues is altered because of the changes in the capillaries, which set up the degenerative change of the intercellular medium. Consequently, the elimination of the therapeutic substance is delayed and those products are more easily accumulated than in younger patients. This should be taken into account in determining the proper doses. The author also suggests that blood transfusions should be given slowly in older patients because their bodies are ill-adapted not only to massive losses of liquids but also to massive accretions. Acquired immunity to infection remains until extreme old age. Antibiotics are quite effective in older persons, but sulfonamides are not to be administered beyond the age of 70. Though in general hormone therapy does not produce any real rejuvenation of older persons, cortisone, corticotropin (ACTH), and the sex hormones give some satisfactory results. The addition of the vitamins B_{12}, B_1, and the pellagra-preventive (P.-P.) factor to the diet is often necessary because of deficiencies owing to a bad detention.

Antibiotic-Resistant Germs.—Clinicians and laboratories often disagree as to the resistance of germs to antibiotics. The researchers think this is due to the fact that the organisms sent to the laboratory for examination come from the pus and the blood where they are already altered. R. Mayou has reported in *La semaine des hôpitaux de Paris* for June 21, 1954, his observations on organisms in the tissue in which they are acting. He has studied bacteria from the pus, blood, and diseased tissues of patients with mastoiditis. Of 31 patients examined, the resistance to antibiotics was similar regardless of the source of the organism in 10, slightly different in 11, and markedly different in 10. Experiments on rabbits showed that the resistance of germs taken at the same time from the same animal varies according to whether the culture has been made from the blood, pus, or the tissues. The resistance of the germs in the blood is little altered. Unfortunately, the study of the resistance of germs in the tissue is interesting but particularly difficult. The author concludes that more surgical biopsies of the infected tissues should be made.

CORRESPONDENCE

INTERFERENCE WITH RADIOACTIVE IODINE UPTAKE TEST

To the Editor:—With the increased use of radioactive iodine in the diagnosis of thyroid disorders, it becomes important that those drugs that influence the iodine uptake by the thyroid gland be recognized. To the vast number of iodine-containing substances that affect this test, the name of another—benzylpenicillin-β-diethylaminoester hydriodide (Neo-Penil; Smith, Kline and French Laboratories)—should be added. The following brief case report illustrates its action.

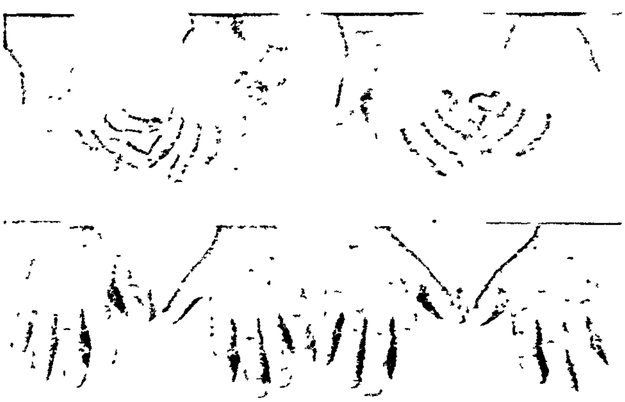
A 50-year-old woman was admitted to the Harrisburg Polyclinic Hospital on March 7, 1954, with a chief complaint of right chest pain, chills, fever, muscular aches, and nonproductive cough. She had a temperature of 99.8 F, respirations 28 per minute, and pulse 80 per minute. Physical findings of a pneumonitis in the right side were elicited and subsequently confirmed by roentgenogram. Treatment was begun with procaine penicillin. On March 10 this was cancelled and Neo-Penil, 300,000 units twice daily, begun and continued until discharge on March 19. The clinical course was satisfactory, and the patient was discharged without symptoms. In an effort to establish the range of normal uptake for this laboratory, it is the practice of the radioisotopes department to request from the resident staff of the hospital patients whose thyroid function is considered to be normal for study. Accordingly, the patient was referred for study on March 16. She received 25 μc of radioactive iodine (I^{131}) on that date, and her uptakes on the succeeding three days were 5%, 1.5%, and 0. In view of these strikingly abnormal figures in the absence of signs or symptoms of hypothyroidism, a basal metabolic rate and protein-bound iodine determination were requested. These were reported on March 19 as +3% and 13.3 mcg. per 100 cc., respectively. On April 5 (17 days after the last dose of Neo-Penil) she was again studied; her uptakes were 11%, 9%, and 6%, and her protein-bound iodine concentration on April 8 was reported as 5.5 mcg. per 100 cc. Review of this patient's chart indicated that the only iodine-containing drug she had received was Neo-Penil. On inquiry, Smith, Kline and French Laboratories reported that Neo-Penil contains 90 mg. of inorganic iodide per 500,000 unit dose or 18 mg. per 100,000 units. Krosnick (*J. Clin. Endocrinol.* 14:242 [Feb.] 1954) has reported transient elevations of the protein-bound iodine concentration after therapeutic doses of Neo-Penil. Accordingly it is felt that this represents another instance of iodine interference with the radioactive iodine uptake test.

George L. Jackson, M.D.
1919 N. Front St., Harrisburg, Pa.

CONGENITAL DEFORMITY OF THE HANDS

To the Editor:—Dr. Barnett Zumoff published in the May 29, 1954, issue of The Journal, page 437, the report of an unusual type of congenital deformity of hands, consisting of symmetrical finger contractures. I had the opportunity to observe a similar case and, after Dr. Zumoff's article appeared, contacted the patient for additional information on his genetic history. Because of an absolute lack of literature on the subject this case, too, may be of interest.

The patient is a 41-year-old farmer who was originally admitted to the hospital because of a peculiar syndrome of cyclic episodes of hyperactivity, bulimia, and hypersomnia, resembling somewhat the Kleine-Levin syndrome. This syndrome developed after a hyperthyreotic condition that was successfully treated with propylthiouracil. His brother, whose hands show the same congenital anomaly, had hyperthyroidism that was treated in the same way at about the same time, but without any following complications. The hands of both brothers are shown in the accompanying illustration. The fourth and fifth fingers of both hands were disproportionally thinner than the others and in flexion contracture. The proximal interphalangeal joints of fingers two through five were broadened and slightly flattened and deviated toward the middle finger. The skin of the dorsal and volar surface was of sclerodactylic appearance, but on microscopic examination of it only moderate hyperkeratosis and acanthosis was found. According to the patient's statement, this condition was a congenital one but never limited him in his activities. A similar picture was found in his brother and his 3-year-old daughter. Nothing abnormal could be detected in his parents, but the same condition existed in one of his mother's female cousins. This seems to indicate that the condition may be also a latent one transmitted by a female gene-holder.



Zygmunt Lewitus, M.D.
Beilinson Hospital
Petah Tikva, Israel.

BRITISH NARCOTIC SYSTEM

To the Editor:—Several years ago a professor of sociology at an American university who is a self-appointed expert on drug addiction, after interviewing a few drug addicts, wrote an article in which he advocated that the United States adopt the British system of handling drug addicts by having physicians write prescriptions for addicts. He reported that this system had abolished the "black market" in narcotics and that consequently there were only 326 drug addicts in the United Kingdom. The professor followed the method used by dictators to "make it simple, say it often"; true or false, the public will believe it. "Adopt the British system" is now urged by all self-appointed narcotic experts who conceal their ignorance of the problem by ostentation of seeming wisdom. The statement was recently used by a Columbia University professor on a television program and in a national press release in advocating this system. A Citizens Advisory Committee report to the attorney general of California urged the British system. It has appeared in articles by university professors in several states. The *Yale University Law Review* published a supporting article. It is now accepted as a fact.

Nothing could be further from the truth. The British system is the same as the United States system. Following is an excerpt from a letter dated July 18, 1953, from the British Home Office, concerning the prescribing of narcotic drugs by the medical profession:

> "A doctor may not have or use the drugs for any other purpose than that of ministering to the strictly medical needs of his patients. The continued supply of drugs to a patient either direct or by prescription, solely for the gratification of addiction is not regarded as a medical need."

There is a black market for opium in the United Kingdom. Following is a typical seizure report:

> Seizure at Hull, England, on N[illegible] 195[illegible] [illegible]47, municated by the Government [illegible] 1953, to the Secretariat of the [illegible]
>
> Raw [illegible] kg.

> When Tham Pean Chi, a Chinese carpenter from the British motor vessel AVRISTAN (Frank C. Strick & Co.) coming from Basra, Iraq; Aden; Massawa, Eritrea; and Egyptian ports, left the dock, he was searched on suspicion, owing to his bulky appearance. The above-mentioned opium was found in the pockets of his jacket and in the pockets of a home-made calico waistcoat which had been designed specifically for the carriage of the drug. The waistcoat was worn beneath the accused's shirt. The accused stated that he had been given the opium in Massawa, Eritrea, by a man who gave him 30 Abyssinian dollars ($12) per pound (453.6 grammes) to carry the drug to the United Kingdom where he would be contacted by the purchaser.
>
> Tham Pean Chi was sentenced to imprisonment for four months.

There was 74 lb. (33.6 kg.) of opium seized in the United Kingdom in 1952. Opium smokers in the United Kingdom who use smuggled opium are not referred to physicians to be supplied by prescription. There is a very considerable black market for hashish (marihuana) in the United Kingdom, with seizures being made almost every day. British newspapers indicate that the use of hashish has been increasing among teen-agers. No physician would give a prescription for marihuana in the United Kingdom, as he would be charged with a narcotic violation. Quoting from the annual report of the United Kingdom for 1952, "the number of seizures of hemp (hashish or marihuana) and opium provided the only evidence on which to base an estimate of the extent to which these drugs are illicitly used in the United Kingdom." There is also a black market for morphine and meperidine (Pethidine) in the United Kingdom. Twelve per cent of the illicit trafficking cases in the United Kingdom relate to forged prescriptions or concurrent supplies from more than one physician to obtain morphine or meperidine to gratify addiction. The British government arrests these addicts who forge prescriptions for morphine and meperidine. They are handled the same way in the United States. There are also robberies by addicts of drug stores or other establishments handling narcotics in the United Kingdom. These addicts go to jail and are not turned over to a physician to obtain prescriptions to continue their addiction.

The British government annual reports show only those addicts "known to the authorities." Twenty-five per cent are in professional classes. Opium and hashish addicts are not reported. The British government is a party to all the international narcotic conventions to which the United States is a party. They enforce treaties in the same manner as the United States. The British and United States systems for enforcing narcotic laws are exactly the same.

A pamphlet, "Narcotic Clinics in the United States," giving the history of the opening and closing of clinics, can be obtained free of charge by writing to the Bureau of Narcotics, Washington, D. C.

H. J. Anslinger
Commissioner of Narcotics
Bureau of Narcotics
Treasury Department
Washington 25, D. C.

IN A WAITING ROOM

To the Editor:—I had an appointment with my doctor recently and had an opportunity of observing his office nurse in action. As I walked into the waiting room, the door of the office was open and I saw the nurse talking to a pretty woman in her early thirties, whose hair was greying prematurely. A man who had been sitting in the waiting room joined the nurse and woman and identified himself as the woman's husband. The nurse said in a loud voice, "Yes, I know you are Mr. Joy." Then she proceeded to tell, in the same loud voice, an excruciatingly funny story—to her—about how she had made a mistake last week and taken the wife of a male patient for his mother. The poor woman staggered through the waiting room, with the stares of the waiting patients on her face, completely demoralized and looking at least 10 years older.

The nurse then asked the woman on my right to come in. A woman who was across the room said, "But I am next," as the woman on my right tried to say that the other woman was next. After the nurse went into a long diatribe about how she had to take the people who had appointments first, the woman across the room said, "But I have an appointment." Finally the nurse ushered in the right woman, whose face was flaming by that time. When another patient left, the nurse called me instead of the woman on my right. The woman said, "But I am next," and the nurse replied, "You wouldn't come in when I called you before, so you will have to wait." I looked at the woman, she shrugged her shoulders, and I went into the office.

The nurse asked me to step on the scales to be weighed. She then found that she had the wrong card and went out to get mine. I did not realize how long she would take so I stayed on the scale. By the time she came back I felt like a suspension bridge, swaying in the breeze. Then she proceeded to read my card. It had plenty on it after two operations, and all the time I continued to sway on the scale. Then she started to push the little levers around and said, "You've gained weight," in the most accusing voice, as if that hadn't been my aim and ambition. When I stepped off the scale she said, "Aren't you going to let me weigh you?" How did she know I had gained weight if she had not weighed me? By that time I was at the boiling point and had all I could to restrain myself from violence. I restrained myself nobly, but I blew up and told her a few things about trying to calm and soothe patients instead of aggravating them. There was no point in waiting to have my blood pressure taken—I'm sure it was high enough to cause a stroke or heart attack—so I walked out of the office.

(Name withheld)

WANTED BY FBI

To the Editor:—Kathleen M. Nagler, alias Kay Herman, Mrs. J. J. Whitmore, Kathleen M. Moran, and Kathleen M. Tomkin, is wanted by the FBI, after being indicted by a federal grand jury at Richmond, Va., on April 5, 1954, for violation of the Interstate Transportation of Stolen Property Statute. She allegedly conspired and participated with a male confederate in a swindle of an individual that resulted in more than $200,000 in stolen cash and jewelry being transported from the state of Virginia to the state of New York in March, 1954. The accomplice subsequently surrendered, but Kathleen Nagler is still at large. An American white female, this fugitive was born on Nov. 5, 1915, at Lolita, Calif. Of slender build, she is 5 ft. 6 in. tall, weighs 125 lb., and has a medium complexion. She has brown eyes and naturally dark brown hair, which may be dyed or worn in a bun. She presents a neat and attractive appearance, and has been employed previously as a clerk and stenographer.

To cover a noticeable scar on the lower front part of the throat, which reportedly resulted from a previous goiter operation, she usually wears a high collar, scarf, or necklace. Reportedly, she uses Lugol's solution, which is obtainable without a prescription, for a recurring thyroid ailment which might require additional medical attention. Any person having information concerning this fugitive is requested to notify immediately the Director of the FBI, Washington, D. C., or the nearest division of the FBI, the location of which is listed on the first page of local telephone directories.

Federal Bureau of Investigation
212 W. Monroe St.
Chicago 6.

GOVERNMENT SERVICES

ARMY

Physicians Needed at Redstone Arsenal.—Two medical officers are needed at Redstone Arsenal, Huntsville, Ala. The ratings for these positions are GS-12 and GS-13, paying $7,040 and $8,360 per annum, respectively. The industrial medical program includes the operation of a clinic and emergency stations. Applicants should submit standard form 57, Application for Federal Employment, to Civilian Personnel Officer, Redstone Arsenal, Huntsville, Ala. The arsenal, which is located in the Tennessee Valley, renders medical services to about 12,000 military and civilian employees.

Army to Add Fluorine to Its Water Supplies.—Fluoridation of drinking water that lacks fluorine has been approved for Army installations by the Army Medical Service. Surgeon General George E. Armstrong said the Army's Corps of Engineers will provide the engineering skill needed to install the process. Before posts and stations become eligible for the installation of a fluoridation unit, a request must be submitted to the Surgeon General accompanied by a report on the natural fluorine content of the water consumed on the post and the number of persons who would benefit from the procedure.

General Armstrong said, "It is now known that the amount of tooth decay in children is much greater in communities where drinking water is deficient in natural fluorides." Regulations now in effect to control the granting of requests for fluoridation of water at Army posts have global application. It is expected, however, that Army stations east of the Mississippi River will make up the largest number of those requesting fluoridation. Army personnel on duty in the Texas area and certain midwestern states have a water supply that contains a natural supply of fluorine. Alaska will probably be the first command outside the zone of interior to have fluorine added to Army water supplies.

Civil Affairs in South Korea.—The monthly civil affairs summary for South Korea for August, 1954, signed by Dr. Ragnar Nilssen, assistant chief, Public Health Branch, states that about 45 tons of medical books and journals contributed from all parts of the United States were received in Seoul and that the Rockefeller Foundation made a grant of $5,000 to provide current medical journals for the six medical schools, the School of Public Health, and the Ministry of Health.

The rehabilitation of the 40-bed Samchok Provincial Hospital was completed, and the hospital opened on Aug. 26. The construction of the Taegu Medical College Hospital was completed in August. There was said to be great activity everywhere in the rehabilitation and new construction of medical installations. The 80-bed Electric Hospital in Seoul will open soon, and a 30-bed hospital is under construction in Yongdongpo. The 40-bed Sokchori Hospital opened Aug. 26. The Hwa Sun Labor Hospital and the Hwa Sun Coal Mine Hospital, which care for the coal miners of that area, are increasing their hospitals from 10 to 30 beds. A National Veterans Hospital is nearing completion, and the St. Benedict's Sisters Hospital in Kyongsang Namdo is being rebuilt with an increase of 20 beds. A new 50-bed Baptist Hospital, a 30-bed Seventh Day Adventist Hospital, a new 200-bed hospital for the Maryknoll Sisters, and a 50-bed Holy Spirit Catholic Sisters Hospital in Miryang are under construction. The Kan Sing, Kyo An, and Yang Yang Hospitals in the Corps areas are nearly completed.

The fifth course in basic training for public health physicians was to start in September, but future plans were awaiting the completion of a survey by Dr. Lloyd J. Florio, professor of preventive medicine, University of Colorado Medical School in Denver, consultant for the American-Korean Foundation. The National Tuberculosis Center in Seoul was opened Aug. 30. Tuberculosis testing and BCG immunizations continue in all provinces, and it was planned to train 310 workers in BCG vaccination, including physicians, nurses, and midwives. The training courses were to be of 10 days' duration.

The Republic of Korea Ministry of Health reported 17 health centers in South Korea on Aug. 19. The Kyongsang Pukto Provincial Laboratory Unit was temporarily closed owing to lack of personnel. The Korean Red Cross operates nine ambulances that sometimes serve as mobile clinics to carry out immunization and preventive medicine programs in addition to giving limited medical care. In August the Red Cross was engaged in a fund-raising campaign for 100 million *hwan*, and 78% of that amount had been pledged by the Korean people themselves.

The total number of physicians registered was 7,128, of whom 2,718 were in private practice, 1,205 in government or provincial service, and 490 in public health dispensaries; the remainder were either with the Republic of Korea armed forces or their whereabouts were unknown. The standard of medical care was said to be still far below a reasonable standard even in the larger hospitals. Physicians still are being drafted into the Republic of Korea armed forces.

NAVY

Captain Canty Returns from Europe.—Capt. Thomas J. Canty, M. C., has returned from Europe, where he represented the Navy at the sixth Congress of the International Society for the Welfare of the Crippled and Disabled at The Hague, Holland, Sept. 12-18. Forty-six countries were represented at the congress. Captain Canty, head of the Navy's Amputee Center at the Naval Hospital, Oakland, Calif., presented a paper on "Amputee Rehabilitation and Research in Artificial Limbs." After the congress he visited hospital and rehabilitation facilities in Copenhagen, Denmark, and at Frankfurt, Hamburg, and Karlshue, Germany. At the Orthopedic Hospital in Copenhagen he performed an operation that had not been previously performed at that hospital. In this operation, a panel of skin is formed into a tube that is passed under a normal muscle in such a manner that a plastic hook can be inserted in the skin tube to activate a prosthetic appliance. Captain Canty spoke before the staff of the Copenhagen Orthopedic Hospital on the use of the artificial limbs developed at the Navy's Amputee Center in Oakland. He learned that the Functional Brace developed at Oakland was being used successfully in Denmark. This new brace for poliomyelitis victims permits the wearer to flex the appliance at the knee.

VETERANS ADMINISTRATION

Hospital News.—Dr. Emil A. Gutheil of New York, president of the Association for the Advancement of Psychotherapy, addressed the staff of the Veterans Administration Hospital at Northport, Long Island, N. Y., Sept. 30 on "Psychopathology and Therapy of Sleep Disorders."

Medical Advisory Group.—Dr. Wendell G. Scott, St. Louis, was recently elected chairman by the members of the Special Medical Advisory Group of the Veterans Administration at their quarterly meeting in Washington, D. C. The new vice-chairman is Dr. Robert M. Zollinger of Columbus, Ohio; continuing as secretary of the group is Dr. Brian B. Blades, Washington, D. C. The 20 member Special Medical Advisory Group was established by law to advise the Administrator and the Chief Medical Director on the policies and programs designed to insure the best possible medical care and treatment of disabled veterans.

PUBLIC HEALTH SERVICE

Personal.—Dr. Francis F. Heyroth of Cincinnati has been appointed a member of the National Dental Research Council, Surgeon General Scheele has announced. Dr. Heyroth is associated with the department of preventive medicine and industrial health, College of Medicine, University of Cincinnati, from which school he received his M.D. in 1925 and his Ph.D. in 1929. A biochemist, he has specialized in protein chemistry, nutrition, and the toxicology of substances handled in industry.

Dr. William McKinley Thomas of San Francisco has been appointed a member of the National Advisory Mental Health Council. Dr. Thomas received his M.D. from Meharry Medical College in 1930 and took his internship at Kansas City General Hospital; his postgraduate training was received at the Harvard School of Public Health, Army Medical Field Service School, and Stanford Medical School. His civic interests in San Francisco include membership in that city's Chamber of Commerce and the Commonwealth Club of California.

COUNCIL ON MEDICAL SERVICE

This is the 14th in a series of studies made by the Committee on Indigent Care of the Council on Medical Service concerning local plans for medical care of the indigent. The first 10 articles have been reprinted in booklet form and individual copies are available on request, as are subsequent articles that have been reprinted individually. "Guides for Evaluating Indigent Medical Care Plans" is also available in separate reprint form.

MEDICAL CARE FOR THE INDIGENT IN ALLEN COUNTY (FORT WAYNE), INDIANA

This is a study of the medical benefits available to the indigent and medically indigent of Allen County, Indiana. Allen County has 185,000 residents, of whom 135,000 live in Fort Wayne, an industrial area producing agricultural implements, automobiles, clothing, communication and electrical equipment, and copper products. The county is comprised of 20 townships; Wayne Township, which includes Fort Wayne, and 19 small rural townships that have little need for organized medical care programs.

ELIGIBLE POPULATION

The number of eligible recipients and those receiving medical care are shown in table 1. About 2.9% of the county population is on the assistance rolls. All who receive assistance under either program are eligible for medical care.

TABLE 1.—*Recipients of Assistance and of Medical Care*

	Eligible	Receiving Medical Care
General assistance *	3,267	673 (155 County Home)
Public assistance †	.....	...
Old age assistance	1,319	521
Aid to the blind	45	11
Aid to dependent children	710	210
Total	5,341	1,415

* Wayne Township only; average monthly case load, Jan.-June, 1954.
† Average monthly case load, July-Dec., 1953. Indiana does not have aid to permanently and totally disabled program.

Care for some medically indigent clients is provided through general assistance funds if the applicant can show eligibility for such aid; however, this is not considered as a separate and specific assistance class by the township trustee. Hospitalization also is provided by the county department to persons of marginal income when major or unusual services are needed.

ADMINISTRATION

The general and public assistance programs in Allen County are under different authorities; the county Department of Public Welfare is responsible for the public assistance program, and the township trustees, who are elected officials designated by state law as "overseers of the poor," are responsible for general assistance. Wayne Township is the only township with an organized program of medical care for general assistance clients and is the only one that will be discussed here; the remaining 19 townships, predominantly rural areas with comparatively few residents, do not require a specific plan for providing such care.

In Indiana public assistance is under the general supervision of the state welfare department; however, administration is left to the county departments. The state requires each county to set up a plan for providing medical services for local assistance clients and to submit this plan to the state agency for approval. A detailed form has been devised that the counties may use to outline the services to be provided, the limits of responsibility, the fees, and methods of operation. Within the limits of this outline the county is allowed considerable leeway in devising its own program. Aside from the difference in administering authority, the methods of operation of the public and general assistance medical programs have many similarities. Eligibility for assistance is determined by case workers in the welfare department and in the township trustee's office. All those on the assistance rolls are eligible for medical care.

Bills for physicians' services, hospital care, prescriptions, and other services are sent to the respective administering agencies. All physicians' bills are reviewed by the Welfare and Indigent Committee of the Fort Wayne Medical Society, and dental bills are reviewed by a technical advisory committee established by the local dental society. Township clients needing medical care may obtain disbursing orders permitting them to obtain the services of a physician until the end of the current month. These disbursing orders serve as bill forms for the attending physicians. There are spaces for listing the number and types of calls made during the month and for other services rendered, such as surgical and obstetric procedures. At the end of the month the physician submits one of these orders for each township patient treated during the month, itemizing all services provided and the fees requested. A similar form is used by physicians treating welfare department patients.

The Welfare and Indigent Committee of the medical society, which reviews all physicians' bills, is composed of two five-man committees, one of which is an advisory committee to the welfare department and the other to the township trustee. The members of the welfare department committee are designated by the society, with welfare department approval, while the members of the committee that works with the township trustee's office are designated by the trustee himself, with medical society approval. The chairman of the latter committee has held this post, at the request of each trustee in succession, since this method of operation was originated in 1938. The combined committees meet monthly and consider each physician's bill for the preceding month. Bills are considered in relation to the services provided, to bills submitted by other physicians for treating the same patient, and to the committee members' personal knowledge of the physicians submitting the bills. Fees are checked against the established fee schedule, and charges that are considered too high or inappropriate are reduced or disallowed. Bills for public assistance care are then returned to the welfare department for payment. Bills for general assistance care are paid by the medical society from funds provided monthly by the trustee.

The medical society's president and secretary usually attend the committee's monthly meetings, assisting the committee on an ex officio basis. The committee acts not only as a fee review board but as a grievance committee for both physicians and assistance agencies. Participating physicians may personally consult with the committee if they feel a reduction in fees is unjustified. The committee also reviews occasional hospital bills, acts as an advisory board to determine the need for unusual or expensive treatments and drugs, approves cases for surgery, and generally provides professional counsel for the two programs. In addition, the Indigent Care Committee, which works with the trustee's office, conducts a periodic inventory of the pharmacy maintained in the township building to determine what drugs are available for general assistance patients and what additions are needed for the stock.

A facet of the administrative organization that makes for a particularly well-integrated program is the fact that the same person is an aid to the township trustee and in charge of his medical program in the morning and an assistant to the medical society's executive secretary in the afternoon. This arrangement has been in effect since the current medical program was established in 1938 and the present arrangements with the medical society were begun. At present both the general assistance load and the medical society activities are increasing so rapidly that this arrangement may have to be terminated. However, it has led to close liaison between physicians and the assistance program and has helped bring clearer understanding of both medical and township problems by both parties.

Members of the Committee on Indigent Care are: Drs. H. B. Mulholland, chairman, Charlottesville, Va.; E. A. Ockuly, Toledo, Ohio; Dean W. Roberts, Baltimore; A. J. Bowles, Seattle; E. P. Coleman, Canton, Ill.; J. L. Lattimore, Topeka, Kan.; I. Jay Brightman, Albany, N. Y.; and Mr. R. M. Hilliard, consultant, Chicago.

SERVICES AVAILABLE

General assistance and public assistance clients in Allen County receive about the same medical services. Wayne Township, in which Fort Wayne is located, is the only urban township in the county and contains all the county's hospitals. The amount of township medical care provided outside the township of Wayne is, as has been noted, comparatively slight and makes no significant difference in the general picture. Most patients from other townships receive hospital care in Fort Wayne, with the townships reimbursing the hospitals at the same rate as does Wayne Township. Both programs provide complete medical and hospital care, with free choice of a physician. Both provide prescriptions, nursing care, and home nursing. However, the township's program is somewhat more limited than the county's. The township, although it allows free choice of a physician, also has a part-time salaried physician who holds daily sessions in the township trustee's small clinic. General assistance clients are encouraged to come to this physician for examination and treatment but may be treated by the other practicing physicians in the area if they prefer. The trustee's office also maintains its own pharmacy, and, except in cases of emergency or in the pharmacist's absence, all general assistance prescriptions are filled here. The county welfare department allows its clients to have prescriptions filled by any pharmacist in the county who belongs to the local pharmacists' association. Dental care for township patients is limited and usually confined to children and to workers who require extractions and fillings. This work is done by a group of dentists who have agreed to participate in the program. The welfare department provides much more dental work and allows free choice of dentist, although special authorization is required for unusual or expensive work. In both programs eye treatment is provided only by ophthalmologists, but the welfare department has less limitation on this care and on the provision of eyeglasses.

There is little difference between the programs as regards hospital care. Neither limits the time allowed or the services provided so long as the attending physician decides they are medically necessary. The township trustee has a salaried nurse on duty at the township clinic; home nursing service for both programs is provided through the Visiting Nurse Service, supported by Community Chest funds. Both programs will provide prosthetic appliances when they are considered medically necessary; however, the township trustee supplies such large appliances as wheel chairs only on a loan basis. A Community Chest organization, the Medical and Dental Service, Inc., offers a medical casework service for those medically indigent persons not eligible for township assistance; it provides them with medical, hospital, and surgical care and provides dental care for their children. The state welfare department's crippled children's service provides a semimonthly orthopedic and consultative clinic for the northeast portion of Indiana at Lutheran Hospital, and the individual counties in this district furnish all necessary follow-up home nursing and physical therapy. The local hospitals provide a considerable amount of charity care for patients not eligible for the public programs, as well as absorbing that portion of the costs for assistance patients not paid from public funds. None of Allen County's hospitals maintain outpatient departments, so that the only clinic services available are those for general assistance clients at the township office.

PROVIDERS OF SERVICES

All of the more than 200 members of the Fort Wayne Medical Society are eligible to participate in both welfare and trustee programs; a monthly average of 66 took part in the trustee program during the first half of 1954. Individual physicians are not required to sign participation agreements. The clinic physician, appointed for an indefinite term by the medical society, is free to adjust his clinic schedule to fit the need. This "clinic" is primarily a physician's examining and treatment office rather than a complete ambulatory clinic. All three of Fort Wayne's hospitals participate in the program. Parkview Memorial Hospital has 242 beds, Lutheran Hospital 240 beds, and St. Joseph's Hospital 325 beds. Each hospital attempts to accommodate assistance patients in wards. Medical care at the county infirmary is furnished by a physician who serves part time. In emergencies five or six of Fort Wayne's nursing homes are also used for assistance patients. All dentists who are members of the Isaac Knapp Dental Society and have signified their willingness may participate in the public assistance program and in the township's program. All members of the Fort Wayne druggists' association may dispense pharmaceuticals for the welfare department but only the part-time clinic pharmacist may do so for the trustee, except in emergencies or when the needed drug is not available at this pharmacy. The Visiting Nurse Service, in addition to the clinic nurse for recipients of general assistance, is available by district to both programs.

PAYMENT FOR SERVICES

In both programs private physicians are paid according to a fee schedule last revised in 1945. This allows $2 for office and hospital calls up to a maximum of 15 per month, $3 for home calls, and $5 for night and Sunday calls. A mileage allowance of 50 cents per mile one way for calls outside the city is permitted. The surgical fee limit is $150. Payment for services not listed in the schedule generally follows the local Blue Shield Plan schedule. The part-time physician at the township clinic receives a salary of $150 a month. The medical society as agent for the trustee pays physicians for their services to the general assistance clients; the welfare department pays physicians directly for services to public assistance clients. Hospitals are paid by the two official agencies at a per diem rate for board and room costs plus full payment for other hospital services. The per diem rate, based on ward costs, is $7 at St. Joseph's and $7.70 at Parkview and Lutheran hospitals. At Parkview Hospital the welfare department also has a reduced rate for x-ray, laboratory, and associated services. The welfare departments pay for drugs at the retail price less 20%. The township trustee stocks his own pharmacy and pays a salary of $2,610 to the pharmacist; under this plan the actual cost of drugs to the trustee is about half their estimated over-the-counter value. The county infirmary is paid at the rate of $43 per month for each welfare department or township client who receives care.

TABLE 2.—*Medical and Related Costs of Public and General Assistance Programs, 1953*

	Old Age Assistance	Aid to Dependent Children	Aid to Blind	General Assistance*
Physicians' services	$ 41,944.37	$16,043.15	$ 847.65	$ 27,212.27
Dentists' services	4,299.46	4,767.88	72.00	1,175.50
Hospitalization	55,269.40	8,225.38	2,216.37	57,249.75
State institutions	....	....	....	8,282.80
Nursing home care	41,428.72	....	800.00	56,584.59
Drugs and pharmaceutical supplies	30,103.74	7,304.41	744.66	7,268.10
Others	3,888.87	980.10	88.00	1,290.40
Totals	$179,934.56	$37,320.92	$3,768.86	$159,263.41

---

* Wayne Township only.

COSTS AND FINANCIAL SUPPORT

Table 2 shows the expenditures of the welfare department and township trustee for medical care during 1953.

In Indiana public assistance grants to the client are limited by legislation to the amount for which federal matching funds are available. Indiana's share in the costs of aid to the blind comes entirely from state funds, while the old age assistance and aid to dependent children programs receive 60% of these funds from the state and 40% from the county. Costs for medical care in these programs may exceed the legal limitation on the size of assistance grants. The costs of the township medical assistance program are met by monthly payments to the medical society from appropriations based on an estimate of costs for the coming year. The trustee has a floating fund from which extra or emergency expenses may be paid; to date physicians have been paid in full for their services. Expenditures from Community Chest funds by the Medical and Dental Service, Inc., for care of the medically indigent amounted, in 1953, to $3,800 for hospital care, $3,600 for medical and surgical care and some appliances, and $3,000 for the dental clinic.

MEDICAL SOCIETY RELATIONSHIP

The Fort Wayne Medical Society has played a vigorous part in the development of the medical assistance programs. In the early 1930's the society studied ways of meeting indigent needs for medical care, formulated a plan, and campaigned actively for its acceptance. When the township trustee approved the plan in 1938 the society assisted in its organization and promotion, established a liaison committee, and has since continued to take an active role in maintaining the program. At the present time medical advisory boards work with both the trustee and the county welfare department, and the combined Welfare and Indigent Committee is diligent in maintaining high quality care and in paring expenses from monthly physicians' bills of both the township and the county.

SUMMARY

Medical care to the indigent of Allen County is furnished through welfare department and township programs. All clients of both the welfare department and the Wayne Township trustee are provided with free choice of physician, hospital care, and other necessary medical facilities, including care in the county infirmary and private nursing homes when needed. Free choice of dentist and pharmacist is provided to public and general assistance clients. The trustee maintains a clinic staffed by a part-time physician, a nurse, and a pharmacist and provides some dental service through the dentists who have agreed to participate in the program. Committees of the medical society are active in the supervision of medical aspects of both programs. They audit bills, provide consultation and authorization for surgery, handle grievances, and inventory the trustee's pharmacy. Reimbursement to physicians and other vendors is in accordance with fee schedules agreed on by the various professional societies; hospitals are paid on a per diem plus cost basis. The medical assistance programs provide care to the indigent of Allen County comparable in amount and quality to that available to other local residents. There are no pronounced deficiencies except some lack of coordination between county and township assistance programs, particularly in regard to which agency is responsible for care of some of the applicants.

LAW DEPARTMENT

MEDICOLEGAL ABSTRACTS

Governmental Hospitals: Standard of Care Owed to Mentally Ill Patient.—This was an action instituted under the Federal Tort Claims Act to recover damages for personal injuries alleged to have resulted from the negligence of government personnel in an Army hospital. From a judgment in favor of the plaintiff, the government appealed to the United States court of appeals, 10th circuit.

The plaintiff was the wife of an enlisted member of the Armed Forces and also a veteran in her own right, having served in the Women's Army Corps, from which she received a medical discharge in 1944. On Aug. 1, 1947, she became a patient in an Army hospital at Camp Carson, Colo., in which she occupied a room on the second floor of the building in which she was quartered. She had been and was then suffering from an ailment diagnosed as neurotic, depressive reaction, chronic, severe, and manifested by suicidal thoughts and intent, and the defendant was fully aware of her mental condition. A guard was posted at the door of the room occupied by the plaintiff with instructions to watch her constantly. The plaintiff manifested signs of mental derangement by smashing a water glass and attempting to put pieces of the broken glass in her mouth, but she was prevented from doing so by the guard. After this incident, the plaintiff cried at length and acted depressed and agitated. A window in the plaintiff's room was open for ventilation, and no steps were taken to fasten it or make it secure. By leaving the room without anyone remaining to keep watch on the plaintiff, the medical officer in charge of the ward, or the guard, or both of them, failed to give her the constant care and attention necessary for her welfare. While all members of the personnel were absent from the room, the plaintiff jumped or fell from the window of her room to the ground outside and sustained serious injuries that resulted in the complete paralysis of her body from the chest area downward. She was totally disabled.

The government first contended that the plaintiff did not have any right to enter the Army hospital. It was contended that the hospital was not one for the care and treatment of mental patients; that the plaintiff was not entitled to be admitted to it; and that in treating and caring for the plaintiff the agents and employees of the United States were not acting within the scope of their duties. Under Army regulations sick wives of enlisted men in the Armed Forces may, said the court, be admitted to Army hospitals when suitable facilities for hospitalization are available. The hospital in question was not designed specially for the care and treatment of mental patients, and it may be conceded without so deciding that, when the plaintiff sought admittance for care and treatment, the managerial authorities of the hospital were vested with full power to decline to admit her as a patient on the ground that suitable facilities were not available. But she was admitted, the court pointed out, and admitting her amounted to a determination on their part that suitable facilities were available for her. Having decided that there were facilities available and having accepted her as a patient, the personnel at the hospital acted within the scope of their duties or employment in treating and caring for her. Any negligent act or omission on their part in the discharge of such duties which proximately caused injury to the plaintiff rendered the government liable under the Tort Claims Act.

The government also contended that it was wholly discretionary with the authorities at the hospital whether a guard should be placed over the plaintiff. Having exercised that discretion by placing the guard at her door, it was equally a matter of discretion whether he should be withdrawn, either temporarily or permanently, even though his withdrawal amounted to a mistake of judgment. The Tort Claims Act provides, the court pointed out, that it shall not apply to any claim based upon the exercise or performance of or the failure to exercise or perform a discretionary function or duty on the part of a federal agency or an employee of the government, whether or not the discretion involved be abused. While it was within the discretion of the managerial authorities at the hospital to determine in the first instance whether suitable facilities were available for the care and treatment of the plaintiff, having decided that such facilities were available and having admitted her, the government was not authorized to exercise in an unbridled manner, and without due regard for the known facts and circumstances, a plain and clear duty or function in respect to her care and treatment, with complete immunity under the act from liability for negligence in connection therewith proximately resulting in personal injury to the plaintiff.

Finally, the government contended that it was not an insurer of the plaintiff; that all reasonable precautions and those customary in like instances were taken by the attendants at the hospital in caring for the plaintiff; and that there was a complete lack of evidence showing negligence as a proximate cause of the accident and resulting injury to the plaintiff. The act subjects the United States to liability for a tort in the same manner and to the same extent that a private person would be liable in like circumstances. It is the general rule that while a hospital conducted for gain is not an insurer of the safety of its patients against personal injuries, whether self-inflicted or otherwise, it is required to exercise ordinary care for their welfare and safety against such injuries. No inflexible and unyielding yardstick can be laid down as constituting ordinary care or the lack of it in all cases. In each case, the question must be determined in the light of its own facts and circumstances. In determining what constitutes ordinary care, the condition of the patient should be taken into consideration. And in the case of a mental patient, the care must be reasonably adopted and proportioned to his known suicidal, homicidal, or other like destructive tendencies. In view of all the facts and circumstances, the leaving of the plaintiff in the room, alone and unattended, constituted negligence on the part of the agents and employees of the government.

Accordingly the judgment in favor of the plaintiff was affirmed. *United States v. Gray, 199 F. (2d) 239 (1952).*

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Cor Pulmonale: Incidence and Etiology in an Industrial City. F. J. Flint. Lancet 2:51-58 (July 10) 1954 [London, England].

Flint states that cor pulmonale, like bronchitis, is a disease of industrial towns. When Wood gave the incidence of cor pulmonale among the various forms of heart disease as 5%, Flint felt that this percentage seemed surprisingly low; hence the decision to assess the incidence of the disease in Sheffield, and the attempt to discover the cause of its apparent local frequency. The present survey includes all patients with congestive heart failure admitted from Sheffield and the surrounding district to the medical wards of the City General Hospital, Sheffield, between March 17, 1952, and March 16, 1953, and the few in whom heart failure developed after admission to hospital. A diagnosis of congestive heart failure demanded a rise of cervical venous pressure above the sternal angle during inspiration and either peripheral edema or hepatic engorgement. In most cases all three signs were present. The 300 patients included 159 men and 141 women. Cor pulmonale was found in 64 men and 12 women. They had severe lung disease, central cyanosis, and sinus rhythm; there was no clinical, radiological, electrocardiographic, or postmortem evidence of other heart disease. The clinical features and the electrocardiographic and radiological pattern of cor pulmonale are described. Thromboembolic complications were rare, occurring only once in 76 patients. Of the 64 male patients with cor pulmonale 42 had chronic bronchitis and 16 bronchiectasis. None of the 12 females had uncomplicated bronchitis. Most, if not all, of these patients had emphysema. The precipitating cause of heart failure in 74 of the 76 cases of cor pulmonale was an acute respiratory infection, usually acute bronchitis; most of the patients were admitted during the winter. The life history of a patient with chronic bronchitis is punctuated repeatedly by respiratory infections. These are usually preceded by virus infections, such as influenza and the common cold. The virus seems to damage the bronchial epithelium and thus to weaken the defenses of the lower respiratory tract against bacterial invasion, with the result that mucus and pus exude into the bronchi. In persons with advanced emphysema respiratory infections have a suffocating effect, causing severe hypoxia and hypercapnia, which, if prolonged, may give rise to failure of the right side of the heart, cerebral depression, coma, and even death. Most of the patients with cor pulmonale in this study came from crowded homes, and all but two had a chronic infection of the respiratory tract with acute exacerbation; 66% had been engaged in the heavy iron and steel industry; and most of them, whether as grinders, fettlers, rollers, or furnacemen, had been exposed to excessive inhalation of various dusts, including silica, or to rapid changes of temperature; all had been exposed to the polluted atmosphere of Sheffield, and the incidence of heavy cigarette smoking was higher in this group than in the controls. Each of these factors may damage the respiratory tract. A third of the patients died, and for these 26 persons the average length of time between the first attack of congestive heart failure and death was 18 months, the maximum being five years. An incidence of 25% for cor pulmonale in all patients (40% in men and 8.5 in women) far exceeded the 5% incidence reported by Wood. The author stresses the importance of combatting air pollution.

Therapy of Gram Positive Bacteremias: With Presentation of 4 Cases. R. R. Beckwith, E. M. Goyette, W. S. Spicer and C. D. Graber. Circulation 10:56-64 (July) 1954 [New York].

According to Beckwith and co-workers, bacteremias caused by Streptococcus viridans can be cured with relative ease, while in infections caused by Micrococcus pyogenes var. aureus and by enterococci (the so-called resistant organisms) therapeutic failures are common. Four patients were successfully treated for a gram-positive bacteremia. One was a 28-year-old man and another a 36-year-old woman with enterococcic bacteremia caused by Str. liquefaciens and Str. faecalis, respectively. There was a 22-year-old woman with bacteremia caused by M. pyogenes var. aureus who responded satisfactorily to massive doses of penicillin combined with streptomycin and probenecid. The fourth patient, a 28-year-old woman with endocarditis caused by M. pyogenes var. aureus, was cured with neomycin after other antibiotics had failed. Certain fundamental principles considered essential to the improvement of therapeutic results in gram-positive bacteremias are emphasized. The primary aim of therapy should be the administration of a bactericidal agent or agents in sufficient quantity to attain a bactericidal level in vivo and to maintain that level for an adequate period. The importance of adequate bacteriological control of treatment is evident. Although no completely reliable method of testing the antibiotic sensitivity is available, the tube dilution-plate method provides the clinician with the most accurate guide to adequate therapy. In the treatment of bacteremia caused by M. pyogenes var. aureus, penicillin is the antibiotic of choice. Minimum initial dosage should be 20,000,000 units of penicillin daily for penicillin-resistant micrococci. Increased serum penicillin levels may be readily attained by giving 2 to 4 gm. of probenecid daily in divided doses. The addition of streptomycin, 2 to 3 gm. daily, may frequently produce a valuable synergistic effect. Therapy should be continued for a period of four to six weeks following the last positive blood culture and the patient observed for an additional two months. The suggested dosage for neomycin in cases of endocarditis caused by micrococci is 10 to 14 mg. per kilogram of body weight for continued administration, but doses of 15 to 20 mg. per kilogram of body weight may be used for a few days without risk of toxic effects. The tendency of neomycin to produce nephro and neurotoxicity (particularly ototoxicity) was manifest in the authors' patient treated with it. Bacitracin should be considered in micrococcic endocarditis, since it is also effective on gram-positive cocci. The usual dosage is 50,000 units intramuscularly every 24 hours in divided doses. The patient should be observed for impairment of renal function or abnormal urinary sediment. Clinical results clearly indicated that enterococcic bacteremia can usually be cured by high doses of penicillin combined with streptomycin. An initial minimum dose of 20,000,000 units of penicillin daily by continuous intravenous drip is recommended; it should be combined with 2 gm. of streptomycin intramuscularly and 2 gm. of probenecid daily in divided doses by mouth. Treatment should be continued for at least four weeks following the last positive blood culture. Use of the broad spectrum antibiotics, chlortetracycline (Aureomycin), oxytetracycline (Terramycin) and chloramphenicol, was disappointing, with clinical results far inferior to those obtained with penicillin combined with streptomycin.

Relationship of Ulcer Pain to pH and Motility of Stomach and Duodenum. E. R. Woodward and H. Schapiro. Proc. Soc. Exper. Biol. & Med. 86:504-506 (July) 1954 [Utica, N. Y.].

The exact cause of pain of peptic ulcer has been the subject of controversy for many years. Observations were made on patients with peptic ulcer pain under conditions whereby simultaneous motility records and pH determinations were obtained from both stomach and duodenum. Patients selected for study had active but uncomplicated duodenal ulcers. Ulcer pain was produced in four of seven duodenal ulcer patients by the intraduodenal administration of 0.1*N* hydrochloric acid at a rate

---

The place of publication of the periodicals appears in brackets preceding each abstract.

Periodicals on file in the Library of the American Medical Association may be borrowed by members of the Association or its student organization and by individual subscribers, provided they reside in continental United States or Canada. Requests for periodicals should be addressed "Library, American Medical Association" Periodical files cover 1945 to date only, and no photoduplication services are available. No charge is made to members, but the fee for other borrowers is 15 cents in stamps for each item. Only three periodicals may be borrowed at one time, and they must not be kept longer than five days. Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order Reprints as a rule are the property of authors. and can be obtained for permanent possession only from them.

that lowered duodenal pH to 1.88 or less. Onset of ulcer pain was not associated with any change in duodenal motility. Ulcer pain induced by intraduodenal administration of hydrochloric acid was not relieved by anticholinergic drugs, even though duodenal motility was abolished. When duodenal pH was elevated by neutralization or aspiration, ulcer pain was relieved. Intraduodenal administration of hydrochloric acid constantly inhibited motility of the gastric antrum.

Hemorrhage in Peptic Ulcer. J. C. Grant. Glasgow M. J. **35**:117-124 (June) 1954 [Glasgow, Scotland].

Grant shows that the mortality from bleeding peptic ulcers has varied in different periods. The relatively low mortality of less than 5% during the first two decades of this century was attributed to the large number of acute gastric ulcers, or gastric erosions, met with in young women and the relatively small number of chronic ulcers in older patients. Between 1925 and 1935 the mortality rose to 20%. This increase appeared to be due to an increasing incidence of bleeding from chronic peptic ulcer in older patients. The mortality has fallen since 1935, and this has followed the introduction of early feeding and drip blood transfusion. The relative incidence of gastric ulcer to duodenal ulcer varies in different regions. While in the London area gastric and duodenal ulcers are almost equally frequent, in Glasgow there are seven duodenal ulcers to one gastric ulcer. Of 720 patients with hematemesis and/or melena admitted to a Glasgow hospital between 1940 and 1951, 684 had peptic ulcer, carcinoma of the stomach or esophageal varices accounting for 31 of the 36 patients who did not have peptic ulceration. Of the 684 peptic ulcer patients 177 had hemoglobin levels below 40%. The site of ulcer was known in 199 patients and the ratio of duodenal and gastric ulcers was 7.7 to 1. The mortality for the whole group was 8.6%. It rose sharply after the age of 60 in both sexes. One hundred thirty-seven patients (20%) had recurrence of hemorrhage after admission to hospital, and the mortality in this group was 22.6% or almost three times as great as that for the whole group. In contrast, the mortality for the group of 547 patients (80%) with no recurrence of hemorrhage was only 5.1%. In the group with recurrence the mortality rose gradually with advancing years. Sex, length of ulcer history, previous hemorrhage, perforation, or gastroenterostomy did not significantly affect the mortality. The author believes that the best treatment for elderly patients with bleeding ulcer is replacement of blood loss by transfusion. If bleeding continues surgery is advisable, but not until the patient's general condition is satisfactory. The young patient who has recurrent hemorrhage may also require surgical treatment, but there is not the same urgency. The 40 to 50 year age group takes up a middle position, and in this group the condition of the individual patient must be carefully evaluated. The less fit the patient, the less well will he tolerate repeated blood loss. The surgeon who has the responsibility of advising surgical treatment finds his task difficult if he is seeing the patient for the first time shortly after a second or third hemorrhage. The surgeon should see all patients with hematemesis or melena on their admission and continue to visit them periodically during their stay in hospital. Should further hemorrhage arise the decision for surgical treatment could then be made more promptly.

Uric Acid in Two Patients with Wilson's Disease (Hepatolenticular Degeneration). C. Bishop, W. T. Zimdahl and J. H. Talbott. Proc. Soc. Exper. Biol. & Med. **86**:440-444 (July) 1954 [Utica, N. Y.).

A brother and sister with Wilson's disease (hepatolenticular degeneration) were found to have low serum urate levels and were injected with isotopic uric acid (N^{15}) for pool size and turnover rate determination. The pool size of both was well below normal and the turnover rate was approximately twice the normal value. Probenecid (Benemid) accentuated these findings in the sister but was not tried in the brother because of its adverse clinical effect. When ribose nucleic acid was fed to the brother there was a statistically significant increase in urinary uric acid and this "extra" uric acid was equivalent to about 55% of the calculated purine ingested. There was no significant rise in the excretion of nonuric acid purines after nucleic acid feeding, and this suggests that exogenous purine is mainly converted to uric acid before excretion. The authors point out that earlier investigations had proved that the blood amino acid level in hepatolenticular degeneration is normal even though an aminoaciduria is present. In contrast to this, the serum uric acid levels and the uric acid pool size are decreased according to the data presented here. Several mechanisms could be suggested to account for the difference in behavior of these two types of substances, but more data are needed before any explanation can be validated. Although any relationship between uric acid and the cause or pathogenesis of hepatolenticular degeneration is purely speculative, these findings nevertheless are interesting.

Studies on the Effect of Probenecid (Benemid) in Gout. R. M. Mason. Ann. Rheumat. Dis. **13**:120-130 (June) 1954 [London, England].

After the incidental finding that caronamide had a uricosuric action, it was shown that *p*-(dipropylsulfamyl)benzoic acid (probenecid [Benemid]) had a similar and more potent effect. This substance is presumed to act by interference with renal tubular mechanisms, bringing about reabsorption of urate from glomerular fluid; its uricosuric action is well documented, while its toxic effect on the kidney appears to be negligible. The side-effects, which included acute attacks of gout in some, indicated that this substance was a potent and nontoxic uricosuric agent and provided an opportunity to study uric acid excretion and associated changes of blood levels in subjects with gout. Of the seven patients presented in this paper six had acute attacks of gout during treatment with probenecid. Urinary uric acid and blood uric acid estimations were made. Attacks of acute gout occurred at a time when the level of circulating urate had been brought to normal. Mason suggests that one possible explanation of this phenomenon is that not uric acid per se but a precursor may be responsible for the acute attack. The answer to this problem may lie in the action of colchicine, for it is possible that colchicine acts by blocking the formation of this hypothetical precursor. If such is the case, then this must be an abnormal precursor, since colchicine has no effect on plasma uric acid level. There is some evidence, however, of another metabolic route in the formation of uric acid in subjects with gout. Studies with labeled glycine suggested that in persons with gout a more rapid mechanism exists for the transformation of glycine into uric acid than in persons not having gout, and they suggest that this may occur via a different metabolic route. Such a hypothesis would be consistent with Mason's findings that acute attacks of gout may occur when probenecid administration has produced a uric acid diuresis and brought the blood levels to normal, for it is possible that by removing the end product of the metabolic chain the formation of precursors might even be increased. It would also be consistent with the observations of Wood-Jones in 1950 and Barnett in 1951, who suggest that the basis of the acute attack is a vasomotor disturbance.

Hemochromatosis: Clinical Features and Method of Diagnosis in 27 Cases. M. H. Stauffer, H. R. Butt, and M. B. Dockerty. Gastroenterology **27**:31-45 (July) 1954 [Baltimore].

Stauffer and associates discuss the clinical features and diagnosis in 27 patients with hemochromatosis seen at the Mayo Clinic during the past five and one-half years. The disease was primary in 25 patients and secondary in 2. Needle biopsy of the liver appears to be the earliest as well as the most reliable method for diagnosis. Negative results of cutaneous biopsy were noted in seven cases, but results of hepatic biopsy were positive, demonstrating the value of obtaining hepatic tissue for histological examination. Jaundice was usually absent and excretion of sulfobromophthalein was often normal despite the presence of pigmentary cirrhosis. Hemochromatosis should be considered in any patient who has unexplained hepatomegaly. Diabetes mellitus was absent in 12 of the 27 patients, illustrating that this complication need not be present to establish the diagnosis of primary hemochromatosis. Diabetes is more frequently seen when the disease is advanced. Of the 25 patients who had primary hemochromatosis, 5 were eventually found to have hepatomas. The term "secondary hemochromatosis" is suggested for cases in which refractory, aplastic, or hemolytic anemia is present and in which the number of transfusions appears inadequate to account for the disease on an exogenous basis. The term "exogenous hemochromatosis" is suggested when cirrhosis develops after 100 or more transfusions have been administered. It is suggested that the term "hemosiderosis" still be used for those cases in which severe anemia has required many transfusions, leading to excessive deposition of iron, but in which cirrhosis is absent.

SURGERY

Surgical Treatment of Cerebral Arterial Aneurysms. P. Wertheimer and J. Avet. Angiology 5:259 (June) 1954 [Baltimore].

The two French authors saw 16 cases of cerebral arterial aneurysms in the space of five years. The patients were nine women between the ages of 31 and 68 years, and seven men between the ages of 30 and 54 years. Eleven patients had repeated subarachnoid hemorrhage (one had 9 episodes in 15 years), five had ocular paralysis, and four had hemiplegia. Another patient had an isolated paralysis of the third cranial nerve and trigeminal neuralgia; two more had syndromes of the sinus cavernosus. Another patient had partial epilepsy, and the last had bilateral ophthalmoplegia after severe cranial trauma. In all these patients, the location—supraclinoid in 11, infraclinoid in 5—of the aneurysm, which was usually sacciform and of the size of a pea, was shown by arteriography. After an adequate Matas test, 14 patients were treated by carotid ligation. In eight instances the common carotid was ligated (six ligations were complete or with arterial resection and two incomplete with fascia lata strip), while in six cases ligation was performed on the internal carotid (five complete and one incomplete). Four of the five patients with complete ligations of the internal carotid had hemiplegia. One episode of hemiplegia occurred 17 minutes after ligation and disappeared after removal of the ligature, thus necessitating partial ligation. Two other hemiplegias occurred a few hours after ligation. The fourth patient with hemiplegia died three days after operation. Six of the 10 remaining patients had no recurrence of subarachnoid hemorrhage, 3 had improvement in their ocular paralysis, and 1 was lost to follow-up. The authors stress the necessity of preoperative bilateral arteriography, measurement of ocular pressure, and electroencephalography. The dangers of anticoagulant therapy are pointed out. All these precautions were taken in the last four patients of the series but did not prevent postoperative hemiplegia in one of them. Only two patients underwent direct surgery of the aneurysm; one, 42 years old, died on the fourth day of massive softening, and the other, 46 years old, died of severe hemorrhage several hours postoperatively. The efficiency and relative harmlessness of ligation, as compared with the drastic quality of the direct approach, is brought out by this experience.

The Selection of Patients for Mitral Valvotomy. A. Wynn. M. J. Australia 1:885-891 (June 12) 1954 [Sydney, Australia].

The following conclusions about the selection of patients for mitral valvotomy are based on the author's observation of 90 operated cases. 1. The selection of patients for mitral valvotomy can usually be made by careful consideration of the symptoms and signs together with results of electrocardiography and fluoroscopy. Rarely will additional investigations be required. 2. Effort dyspnea and hemoptysis are the two most important symptoms. When effort tolerance is assessed, allowance must be made for a decrease in physical capacity due to psychological factors. Shortness of breath and not weakness should be the factor that limits effort. 3. By careful evaluation of physical signs, the number of valve lesions may be determined and usually the hemodynamic significance of each. 4. If the left ventricle is enlarged, there is an additional lesion present that virtually rules out mitral valvotomy. The best evidence of left ventricular enlargement is obtained from the character of the apex impulse. Electrocardiography and fluoroscopy are less helpful unless there is no associated right ventricular enlargement. 5. The absence of clinical evidence of right ventricular enlargement, including an examination after effort, virtually excludes the possibility of significant mitral stenosis. 6. Although it is difficult to assess the presence and degree of mitral incompetence if there is also mitral stenosis, the following points are helpful: muffled first sound; loud mitral systolic murmur; no "opening snap"; short or absent mid-diastolic murmur; a loud third heart sound; clinical, electrocardiographic, or fluoroscopic evidence of an enlarged or hyperdynamic left ventricle; a large left auricle; and gross systolic expansion of the left auricle. 7. Gross mitral incompetence may occur in the absence of a systolic murmur and a loud mitral systolic murmur in the absence of mitral incompetence. 8. Patients with greatly enlarged hearts, long-standing congestive cardiac failure, gross tricuspid incompetence, significant aortic lesions, or mitral incompetence rarely benefit much from mitral valvotomy. 9. The ideal patient for mitral valvotomy is the young patient with moderate limit of effort, a small heart, and mitral stenosis as the sole valve lesion. Operative mortality and morbidity in these patients are low, and the clinical improvement is often remarkable.

Resection of Rectal Carcinoma and the Viewpoint of d'Allaines. T. Hoffmann. Beitr. klin. Chir. 188:444-460 (No. 4) 1954 (In German) [Munich, Germany].

Hoffmann points out that d'Allaines and his associates of the Broussais Hospital in Paris believe that resection and preservation of the function of the sphincter muscle should be the aim in the surgical treatment of carcinoma of the rectum. The immediate as well as the late results obtained by d'Allaines over the last two decades prove that this aim can be realized in more than two-thirds of the patients with rectal carcinoma. Resection is possible in all tumors 10 cm. or more away from the anus whenever there is a possibility of performing a broad exeresis of from 15 to 20 cm. of the proximal intestine as well as of the peritumoral tissues to both sides; distal to the tumor a resection of 5 cm. of the intestine is sufficient. The method of choice is a one-stage abdominosacral resection with a temporary artificial anus for from four to six weeks' duration. The technique for this procedure as carried out by d'Allaines is briefly described. The conservation of the entire sphincter insures good continence. The functional results of Babcock's procedure are not as satisfactory, and for this reason the author feels that it should be used only in special cases, such as in tumors close to the anus (6 to 9 cm.) and in cachectic patients to avoid need of prolonged bed rest.

NEUROLOGY & PSYCHIATRY

Prefrontal Lobotomy and Transorbital Leucotomy: Comparative Study of 175 Patients. F. A. Freyhan. Am. J. Psychiat. 111:22-32 (July) 1954 [New York].

Freyhan reviews the results of psychosurgical operations performed on 175 patients between 1938 and 1952 at the Delaware State Hospital. Their previous admissions were known and the course of their illness could be investigated in detail. There is a close contact with patients now at home and with the milieu in which they live; there was uniformity of application of diagnostic criteria and discharge policies. Seventy-one patients underwent prefrontal lobotomy and 104 transorbital leukotomy. The same surgeon performed all of the transorbital leukotomies and most of the lobotomies were also performed by one surgeon. Patients were selected for psychosurgery because of chronicity of illness, resistance to other treatments, frequency of relapses, or violent, destructive, and agitated behavior. The great majority had had ineffective electroshock therapy, insulin coma treatments, or a combination of both. The table that compares the results of the two operations lists the social response patterns. Patients who are now "at home" improved sufficiently to adapt in a manner of which they were previously not capable. The "improved" group comprises patients who could be transferred to more advanced wards, who assumed certain responsibilities in the hospital, or shifted their attention from preoccupation with various pathological symptoms to social activities. The "unchanged" group comprises all patients in whom psychosurgery was a therapeutic failure. The "relapsed" group includes those patients who changed from a favorable to a less favorable psychological status. The percentage of favorable results was similar with the two operations (close to 30%).

The death rate, undesirable personality changes, and postoperative convulsions were minimal with transorbital leukotomy in contrast to lobotomy. The high death rate in the lobotomy series (12.7% operative mortality) constitutes the principal difference in outcome. The higher relapse rate in lobotomy is explained by the longer time interval for observation. Psychosurgery should aim at the least cerebral damage. Its therapeutic benefits can be dramatic in individual cases but are rather limited on the whole. It seems desirable to narrow the range of applicability in order to obtain more satisfactory results.

Therapeutic Experiences with Cocarboxylase (Berolase) in Multiple Sclerosis. H. Leube. Medizinische 27/28:961-962 (July 10) 1954 (In German) [Stuttgart, Germany].

Cocarboxylase (Berolase), i. e., phosphorylated vitamin B_1, the coenzyme of carboxylase, was given intramuscularly in doses of 25 mg. daily for two weeks and then in doses of 12.5 mg. daily for at least an additional five to six weeks to 16 patients with multiple sclerosis. Five patients had chronic multiple sclerosis of more than three years' duration without definite bouts. The remaining 11 patients were having their first bouts of the disease, or at least recent bouts. Seven patients had an increased number of cells in their cerebrospinal fluid, varying from 15 to 130. Treatment with cocarboxylase was instituted on the concept that vitamin B_1, which is important for the nervous system in preventing concentration of pyroracemic acid in the central nervous system, can produce this effect only if it is present in phosphorylated form. Vitamin B_1 cannot exert this effect in patients with multiple sclerosis because of a disturbance of phosphorylation. Since treatment with cocarboxylase is a substitution therapy it must be continued with daily doses of 12.5 mg. even if the clinical symptoms have already subsided partly or completely. Although subjective improvement and a slight decrease of spasms occurred in three of the five patients with chronic multiple sclerosis, the effect of the treatment was not convincing in these patients. On the contrary, highly satisfactory results were obtained in the 11 patients with recent bouts. Fatigue and weakness disappeared within a few days of treatment. Pyramidal signs became less pronounced or disappeared completely, cloni were reduced, the intention tremor improved. Most impressive was the decrease in the number of cells in the cerebrospinal fluid of patients with pleocytosis. Pretreatment levels were reduced from 15 to 4 and from 130 to 21. The cerebrospinal fluid was restored to normal in all patients within 4 to 10 weeks. Despite a certain tendency to remission in recent bouts of multiple sclerosis, the therapeutic effect of cocarboxylase cannot be denied, particularly in view of the less satisfactory results that were obtained less rapidly by other methods of treatment.

GYNECOLOGY & OBSTETRICS

The Incidence of Postpartum Hypopituitarism. H. L. Sheehan. Am. J. Obst. & Gynec. 68:202-223 (July) 1954 [St. Louis].

According to Sheehan hypopituitarism is one of the most serious long-term sequels of obstetric complications, in comparison with which prolapse, stress incontinence, and pelvic adhesions are only minor local inconveniences. The primary pituitary lesion occurs at the time the patient is under the care of the obstetrician. If the obstetric conditions have been such (retained placenta or postpartum hemorrhage) that this lesion might have occurred, the obstetrician should inform the family doctor, so that any subsequent hypopituitarism can be diagnosed early, because these patients generally do not consult anyone about their amenorrhea. During the general circulatory disturbance that follows postpartum hemorrhage the blood supply to the anterior lobe of the pituitary is interrupted and it then undergoes ischemic necrosis (infarction). If the original necrosis involves more than about two-thirds to three-fourths of the lobe there will be some subsequent pituitary insufficiency; if it involves practically all of the lobe the subsequent insufficiency will be severe. The patient then continues as a chronic invalid for from 5 to 20 years and dies in coma. A table that records the incidence of fresh pituitary necrosis at autopsy in 127 patients who died 12 hours to 35 days after delivery and another table showing the incidence of symptoms of hypopituitarism in 166 live patients some years after delivery both indicate the causal importance of hemorrhage and shock at delivery. The clinical picture of hypopituitarism is not well understood and these patients often do not seek medical aid because they are mentally dull. This explains why this cause of chronic invalidism in women was formerly believed to be a rarity. In the past few years it has become clear that the condition is relatively common. A series of nine cases that were proved at autopsy during the past four years are recorded to illustrate the standard clinical and pathological pattern and its variations. The necropsy in the first patient revealed that the pituitary had a normal stalk and pars tuberalis, but the posterior lobe showed areas of atrophy. The anterior lobe was represented by a little fibrous tissue in which only a tiny lamina of parenchymal cells could be found, estimated as about 1% of the original gland. Clinically the patient was of hypothyroid type and might well have been described as having "pituitary myxedema." The thyroid was small, but the most striking secondary change found at autopsy was the severe atrophy of the adrenals.

Bilateral Breast Cancer. W. Trevor. New York J. Med. 54:1937-1941 (July 1) 1954 [New York].

Four per cent of all mature women will contract breast cancer, and the incidence of cancer occurring in the opposite breast is approximately double this (8 to 10%) in women with proved cancer of one breast. Six cases of bilateral breast cancer are reported. Four of the patients are living and well without evidence of recurrence five and one-half, five, four and one-half, and two and one-half years, respectively, after the second mastectomy. The cause of bilateral breast cancer may be a new primary malignant focus in the opposite breast or a lymphatic spread to the second breast from the first. Bilateral breast cancer is divided into two classifications, "nonsimultaneous" and "simultaneous." The prognosis of the nonsimultaneous type is excellent, often being better than unilateral breast cancer after radical mastectomy, and reaches 70% five year survivals after the second radical mastectomy in some series. Treatment consists of bilateral radical mastectomy with postoperative roentgen ray therapy.

PEDIATRICS

Periarteritis Nodosa in a Nine-Month-Old Infant. E. Liban, Z. Shamir and S. Schorr. A. M. A. Am. J. Dis. Child. 88:210-215 (Aug.) 1954 [Chicago].

Only 10 cases of periarteritis nodosa occurring in the first year of life could be found in the literature. A new case is reported in a baby girl in whom symptoms (vomiting, failure to gain weight, and attacks of fever) reportedly were present from birth. At the age of 6 weeks, a diagnosis of congenital heart disease was made at the Hadassah University Hospital, Jerusalem, Israel, on the basis of the patient's cyanosis and heart murmur. A second hospital admission showed the infant to be in a state of marasmus. Cyanosis and dyspnea were marked, and moist rales were heard over both lungs. Her condition deteriorated progressively despite therapy with penicillin, chlortetracycline, and oxygen, and she died 10 days after admission. The diagnosis of periarteritis was made at necropsy, at which time it was also seen that the disease had partly healed. Most of the vascular lesions were old, fibrotic, and acellular. Even the acute lesions, which were few and found only in small arteries, showed only a slight degree of edema, fibrinous exudation, and cellular infiltration devoid of eosinophils. The diagnosis of periarteritis during life is difficult because of the great variety of the clinical manifestations of the disease. Of the 10 cases reported in infants under one year of age, only one was diagnosed during life, by histological examination of a subcutaneous nodule. The present case is the only one in which periarteritis nodosa has been found in the arteries of the lungs in an infant less than one year old. In adults these lesions are fairly common; on the other hand, the coronary arteries are more frequently involved in children. The disease may possibly have developed in utero in this case; such a hypothesis was postulated by Wilmer in two cases of periarteritis nodosa in babies aged 10 and 25 days, respectively.

Juvenile Thyrotoxicosis: Results of Treatment in 30 Cases. R. F. Allen, E. Rose and E. K. Rose. Pediatrics 14:38-44 (July) 1954 [Springfield, Ill.].

Allen and associates report the therapeutic results obtained in 30 children in whom symptoms of thyrotoxicosis appeared before the age of 15 years. Fifteen patients received thyroid irradiation, with or without stable iodine, and 15 received prolonged treatment with antithyroid compounds, with or without stable iodine. The authors did not employ radioactive iodine in children with thyrotoxicosis, because they do not believe that the possibility of late untoward sequelae can be excluded in this form of therapy. The final therapeutic results could be fairly assessed in 24 of the 30 children treated. Satisfactory remissions were obtained in 17 of these. The results were similar in those who were irradiated and in those who received antithyroid compounds. Satisfactory remissions were obtained in five of the six patients subjected to thyroidectomy. The authors feel, however, that thyrotoxic children without nodular goiters should be given a long trial with antithyroid compounds before any resort to thyroidectomy despite the fact that the over-all results from nonsurgical therapy do not compare favorably with those to be expected from thyroidectomy. The preservation of an anatomically intact thyroid for adjustment to the endocrine stresses of puberty and the remaining growth period and the low incidence of post-therapeutic myxedema are the chief reasons for conservative therapy.

DERMATOLOGY

Lupus Erythematosus: Treatment by Combined Use of Massive Amounts of Pantothenic Acid and Vitamin E. A. L. Welsh. A. M. A. Arch. Derm. & Syph. 70:181-198 (Aug.) 1954 [Chicago].

Welsh reports observations on 67 patients with lupus erythematosus (diagnosis confirmed by biopsy), who were treated with massive doses of pantothenic acid derivatives combined with vitamin E. There were 36 patients with chronic discoid, 17 with disseminated discoid, 11 with subacute disseminated, and 3 with acute disseminated lupus erythematosus. Twenty-eight patients had had no previous therapy; 39 had had previous treatment, consisting of prolonged and diversified types of therapy including gold, bismuth, arsenic compounds, liver, salicylates, and steroid hormones. The combination of the pantothenic acid derivatives and vitamin E produced improvement in all patients, even in the group with chronic lupus erythematosus in whom the disease had existed for from 10 to 30 years. This is Welsh's second report on the combination therapy, a preliminary one having been published previously. A review of the work of other investigators, who used these agents individually rather than in combinations, disclosed that their results were mostly unfavorable. Welsh offers explanations why the use of either of the individual agents results in therapeutic failures, and why their combination produces favorable results. Early in this study, patients were treated with the combined use of relatively small amounts of one of the pantothenic acid derivatives and one of the vitamin E preparations. Later, it became apparent that higher dosages were required. The author concludes that the combined use of massive amounts of pantothenic acid derivatives and vitamin E constitutes a safe and effective approach to treatment of patients with chronic discoid, disseminated discoid, and subacute disseminated lupus erythematosus. Limited experience suggests that this procedure is valuable also as maintenance therapy for patients with acute disseminated lupus erythematosus, in whom the acute phase has been controlled by the steroid hormones.

Histopathological Diagnosis of Malignant Melanoma. M. Couperus and R. C. Rucker. A. M. A. Arch. Derm. & Syph. 70:199-216 (Aug.) 1954 [Chicago].

Couperus and Rucker discuss the results of their studies on the microscopic aspects of primary and metastatic malignant melanomas of the skin, from which they attempted to draw conclusions regarding the most frequent and definite features of malignant melanoma. Of the 598 cases that were reported as melanomas in the three hospitals from which the authors obtained their material, 85 cases were rejected as having incomplete histories, no biopsies, or inadequate sections. Forty cases studied histopathologically were diagnosed as not being malignant melanomas. Of the 473 cases diagnosed as malignant melanomas, 33 were primary in the eye, 141 were primary malignant melanomas of the skin, 38 were metastases to the skin, and 261 cases were metastatic to internal organs. On the basis of studies on 179 cases of malignant melanomas of the skin (141 primary and 38 metastatic lesions) they conclude that the diagnosis of a primary malignant melanoma of the skin can be made if the following criteria are present in association with junctional features: (1) an inflammatory infiltrate at the periphery of the lesion, (2) more than an occasional mitotic figure, (3) giant cells with a single bizarre nucleus, (4) marked pleomorphism, (5) general enlargement of all tumor cells, (6) tumor cells and mitoses in the epidermis. If associated with a junction nevus, usually one or two of these features are necessary to arrive at the diagnosis of a malignant melanoma. In most instances three or more of these factors will be present in a primary malignant melanoma. Criteria that the authors classified as of secondary importance may, nevertheless, be essential in making a diagnosis in a given instance, and they are always of value as supplementary evidence. These criteria are melanin pigmentation, hyperchromatism of the nucleus, prominence of the chromatin network and of the nucleoli, alveolar grouping of the tumor cells, junctional features, multinucleated giant cells, peripheral rete peg elongation, ulceration, and dysjunction of the tumor cells. The junction or junction compound nevus presents the chief problem in the differential diagnosis of the malignant melanoma. In the uncomplicated state of this nevus, no inflammatory infiltrate and practically no mitotic figures are found, while in the primary melanoma of the skin the inflammatory infiltrate is always present and mitotic figures nearly always present. Single nucleus giant cells with bizarre nuclei, which are present in 89% of malignant melanomas, are never seen in benign nevi.

OTOLARYNGOLOGY

The Rhesus Factor in Deafness. F. Cavanagh. J. Laryng. & Otol. 68:444-460 (July) 1954 [London, England].

Cavanagh discusses the Rhesus factor, the pathology, clinical aspects and treatment of erythroblastosis fetalis, and the association of deafness and Rhesus sensitization. He reports studies on three groups of children, two of whom had a history of Rhesus factor sensitization. One group consisted of 118 deaf children. In this last group blood samples of the children and their mothers were studied for Rhesus factor incompatibility, and the details of the first two weeks of life were investigated. This group of 118 deaf children included three with Rhesus factor sensitization. Six cases of deafness were found among the 124 children belonging to the two groups with a history of a Rhesus factor sensitization. Otologists and pediatricians should give attention to this possible sequel of Rhesus factor incompatibility.

Olfactory Esthesioneuroepitheliomas of Louis Berger. L. Frühling and C. Wild. A. M. A. Arch. Otolaryng. 60:37-48 (July) 1954 [Chicago].

The occurrence of true olfactory esthesioneuroepitheliomas of the nasal fossae, first described by Louis Berger, is reported in four men. The symptomatology consisted of nasal obstruction, nasal hemorrhages, headache, and anosmia, and thus was quite usual and in no way specific. Endoscopic examination of the nose revealed the presence of a tumor, but clinical diagnosis was not possible. The tumor was removed surgically in all four patients. The authors emphasize that any slightly unusual or suspicious polypoid formation in the nasal fossae should be subjected to microscopic examination. This was performed in the authors' cases. Microscopic diagnosis may present certain difficulties, particularly to the histologist unaware of the existence of these nerve tumors. In addition to the pseudoepitheliomal forms, there exist pseudosarcomal forms with spindle-shaped elements, or with lymphocytoid elements, or even polymorphous forms. True neuroepithelial rosettes (tall cylindrical cells with distinct outlines at the apex and the sides, the inferior portion of the cell body disappearing in neighboring elements) were observed in three of the surgical specimens, and typical neurospongial cells were seen in all four specimens. A rigorous histological technique with, especially, a study of the collagen, using Masson's trichrome stain, can be of great help. The extreme radiosensitivity of the true olfactory esthesioneuroepitheliomas is stressed. The total dosage employed by the authors varied from 4,500 to 6,500 r. Only one of the four patients was followed up; this patient survived for more than five years after surgical removal of the tumor followed by irradiation therapy and is still in good health. The authors believe the preferred method of therapy to be surgical ablation of the tumor mass followed by a course of high-dosage irradiation. Neurogenic tumors of the nasal fossae originating in the olfactory organ are infrequent, but their rarity is partially due to the failure to recognize them owing to the possibility of microscopic confusion with glandular epitheliomas or sarcomas. The attenuated malignancy of these tumors, their extreme radiosensitivity, and the considerable length of survival of the carefully treated patient, are emphasized.

THERAPEUTICS

Prolonged Cortisone and Hydrocortisone Therapy. C. E. Arbesman and N. B. Richard. J. Allergy **25**:306-311 (July) 1954 [St. Louis].

Seventy-five patients, 63 of whom were asthmatic, had prolonged therapy with cortisone, hydrocortisone, or both. The general result, insofar as it could be evaluated, was satisfactory. Three important facts were gained from the study: 1. Hydrocortisone is at least equally as effective as cortisone in the relief of bronchial asthma. 2. The comparable effective dose of hydrocortisone is approximately two-thirds that of cortisone. 3. The proper maintenance dosage level for each patient is more important than the choice between cortisone and hydrocortisone.

Treatment of Chronic Joint Disease with a Derivative of Colchicum Autumnale. S. Rizzente. Minerva med. **45**:1784-1787 (June 20) 1954 (In Italian) [Turin, Italy].

Fifteen patients, 65 to 85 years of age, with chronic disease of the joints (ankylosis and/or arthritis deformans) were treated with "colchicoside," a derivative of Colchicum autumnale. From the pharmacological standpoint, the action of this drug is like that of colchicine, but it is much less toxic and a therapeutic dosage 50 times larger than that of colchicine can be used. Pain was marked in all these patients, and active and passive immobility was present in all. Previous therapy had been of no avail. A dosage of 5 to 10 mg. of the preparation was given intravenously for 5 to 15 day courses with an interval of 50 days between. Administration of the drug had to be discontinued in two patients because of a marked gastric disturbance. The effect on pain and motility was good in 11 patients, and in 10 of these the general condition and well being were improved. A slight leukopenia with eosinopenia and lymphocytosis was observed in 8 patients; the sedimentation rate and the arterial pressure increased slightly in 12 and 9 patients, respectively; azotemia, glycemia, and urine were not modified, nor was the objective condition. Because of the good effects of the preparation on pain and motility and the absence of side-effects, Rizzente recommends this drug for further clinical trial in patients with chronic disease of the joints.

PHYSIOLOGY

Relationship of Physiologic Third Heart Sound to the Jugular-Venous Pulse. E. E. Eddleman Jr., K. Willis, P. P. Walker and others. Am. J. Med. **17**:15-16 (July) 1954 [New York].

Heart sounds, carotid pulses, jugular-venous pulses, electrocardiograms, as well as a history and physical examination, were obtained in 60 young adult medical students. No cardiac abnormality was noted in any of the subjects. A Cambridge 4-channel, direct-writing recorder was principally used. Most of the subjects with the third heart sound were restudied later, by recording the heart sounds and jugular-venous pulses on a Sanborn twin-beam photographic oscillograph. Jugular pulses were obtained high in the neck and over the jugular bulb with the use of a glycerine capsule as well as with the suction-cup-type end piece. Care was used to obtain as "pure" a jugular pulse as possible. The time of the occurrence of the third heart sound, in relationship to the jugular-venous pulse, was identical with all types of recording technique used. A third heart sound was recorded in 11 of 60 subjects. This was a low-pitched sound following the second heart sound. It was best heard directly over the apex in the recumbent position. The phonocardiographically recorded sound occurred at the peak of the V-wave in the jugular-venous pulse, suggesting that the physiological third heart sound is the result of the opening of the atrioventricular valves and is in reality a "physiological opening snap." In recent years the third heart sound has been considered to occur during the period of maximal ventricular filling. The present study reverts to the older view that it is produced by the opening of the atrioventricular valves, hence is a physiological opening snap. An exaggerated opening snap consequently is not necessarily indicative of mitral stenosis.

New Studies on the Physiology and Pathology of the Lymphatic Circulation. Istvàn Rusznyàk. Minerva med. **45**:1468-1473 (May 23) 1954 (In Italian) [Turin, Italy].

The author's studies at the Medical Clinic of the University of Budapest on the origin of edema revealed the importance of the lymphatic circulation not only in producing edema but also in maintaining the fluid balance of the body in general. He found that the lymph vessels are susceptible to a vasoconstrictor action capable of blocking the lymph circulation. This action depends directly on the sympathetic, and the lymphangiospastic impulses follow the same course as do the periarterial sympathetic fibers. Thus, in opposition to old theories, the circulation in the lymphatic vessels is not a passive phenomenon but one that is closely dependent, as the blood circulation, on the autonomic nervous system. In certain circumstances the lymphatic circulation may become insufficient. It is a mechanical insufficiency when organic alterations, such as tumor compression, lymphangitis, thrombophlebitis, scars, and inflammations, occlude the efferent lymphatic vessels. It is a functional insufficiency when the vessels become closed because of their own spasm or because of hemodynamic causes. The author also found that not all the lymph circulating in the peripheral vessels reaches the thoracic duct; part of it is reabsorbed in the sinuses of the lymphatic nodes and through the walls of the lymphatic vessels. He also studied the importance of the lymphatic circulation on the function of each organ. With regard to the kidney, it is known that occlusion of the ureter does not produce severe alterations of the renal parenchyma. His experiments on dogs revealed that the urine that is produced in such cases from the renal pelvis reaches the interstitial tissue of the kidney and is reabsorbed through the lymphatic vessels. When the urine that reached the interstitial tissue and the exudate of the capillaries resulting from the toxic effects on them are not eliminated in great quantity by the lymphatic vessels, hydronephrosis develops, and the kidney may last sometimes for some weeks but usually only for a few days. His studies on the lymphatic circulation in the liver confirmed the presence of Desse's space and indicated that it is an essential part of the hepatic interstitial tissue. Concurrent ligation of the common bile duct and the efferent lymphatic vessels in dogs caused alterations that were severer than those resulting from ligation of the common bile duct alone. In studying the lymphatic circulation of the heart in dogs, he ligated the lymph nodes and then the thoracic duct and the large right lymphatic vessel, sparing nerves, arteries, and veins. The electrocardiograms taken a few days later revealed pronounced alterations. Ligation of the coronary sinus or occlusion of the lymphatic circulation in the heart did not threaten the life of the dogs, but when the two were combined, 12 of the 13 animals died three to six hours after the intervention. When venous thrombosis develops in the heart, the eventual consequences that may derive depend greatly on the reaction of the lymphatic vessels of the heart.

BOOK REVIEWS

Principles and Practice of Antibiotic Therapy. By Henry Welch. In collaboration with Braley, and others. Specially edited by Félix Martí-Ibáñez. Cloth. $12. Pp. 699, with illustrations. Medical Encyclopedia, Inc., 30 E. 60th St., New York 22; distributed by Blakiston Company (division of Doubleday & Company, Inc.), 575 Madison Ave., New York 22, 1954.

This new book provides broader coverage of the subject and brings up-to-date its predecessor, "Antibiotic Therapy," by Welch and Lewis. The senior author of the former publication has prepared the new book in collaboration with 16 other authorities. The new book consists of three parts. The first deals with historical, developmental, microbiological, pharmacological, and pharmaceutical aspects of the antibiotics, including a chapter on their synergism, antagonism, and hormesis. The second part discusses clinical uses according to various types of infection; the third part, according to the specialties of ophthalmology, pediatrics, oral surgery, and dentistry. The first part includes much detailed information on the commercially available forms of antibiotics. Some of this pertains to regulatory aspects of government certification of antibiotics that are well known to the author as Director of the Division of Antibiotics, Food and Drug Administration, United States Department of Health, Education, and Welfare. However, the usefulness of some preparations, such as troches and those containing certain combinations of antibiotics or antibiotics with other drugs, that are legally permitted to be distributed in interstate commerce, is open to question. Despite the uncritical discussion of some formulations, the descriptive information included is both detailed and accurate. For the most part the clinical portions of the book are critically written, although some ophthalmologists may challenge the statement that it is advantageous to combine neomycin, chlortetracycline (Aureomycin), and oxytetracycline (Terramycin) with cortisone for ophthalmic use. The book is generally informative, comprehensive, and useful as an evolutionary survey of antibiotic medication in the United States. It includes several tables and, at the end, a general index. The format is clear; the paper and binding are of good quality. All workers in the field of antibiotics, both laboratory and clinical, should find this new book helpful as a reference to early and recent developments in this important branch of therapeutics.

The Meaning of Social Medicine. By Iago Galdston, M.D., Secretary, Medical Information Bureau, New York Academy of Medicine, New York. Cloth. $2.75. Pp. 137. Published for Commonwealth Fund by Harvard University Press, Cambridge 38, Mass., 1954.

Social medicine, as distinguished from socialized medicine, is discussed in regard to its history, significance, and future by the former secretary of the Committee on Medicine and the Changing Order of the New York Academy of Medicine. This book is organized so that its final chapter contains the "quintessence of the argument," while its author states in the foreword "the originality of this work is to be found in the exposition of the argument rather than in its conclusions." Following the last chapter is an addendum, "Social Medicine in England," in which the author more fully explains the difference between social and socialized medicine. Social medicine is, says Dr. Galdston, "a derivative of the progress of medicine itself." It "belongs to that order of important world events which are not deliberately brought about, but simply occur." It is medicine concerned both with healing disease and with making the sick man healthy in mind and in body. It includes a study of the "total man in his total milieu" and is concerned not only with the improvement of preventive medicine and public health, but also with current methods of clinical medicine. Its aim is not to alter but to expand the field of medicine. In his first chapter Dr. Galdston discusses the place of social medicine in medical history and provides diverse definitions of his subject quoted from other proponents of social medicine. Chapter 2 is entitled "The 'Failure' of Modern Medicine." "Medicine," says the author, "has achieved much in the treatment and also in the prevention of specific diseases. *It has, however, failed in the elimination of disease and in the promotion of health.*" (Italics his.) He relates this failure to the growth of etiological medicine, described in chapter 3. He questions "the contention, always implied and often expressed, that bacteria and the other specific noxious agents, toxins, antitoxins, chemotherapeutic agents, antibiotics, and all the other items in the armamentarium of etiological medicine represent and embrace all that is pertinent to the comprehension, diagnosis, cure, and control of disease. Also, that whatsoever remains unknown and unresolved as to, say, cancer or hypertension or psoriasis will become known and will be resolved in quite the same ways in which those things now known and manageable were fathomed and mastered." He does not disclaim the value of these discoveries, but believes that they are stressed to the exclusion of the whole man and that medical technique has taken the place of medical philosophy. "Social medicine promises to be the corrective and the fulfillment of the modern biological sciences," he states.

In the fourth and fifth chapters Dr. Galdston discusses several of the ways in which modern medical methods have not fulfilled the hopes of their originators. Neither the cause of influenza nor the reason for epidemics is conclusively known; meanwhile, the medical progress culminating in this century may be, while decreasing mortality, increasing morbidity. The author lauds the fact that it may now be an old man in his waning years who is taken by pneumonia rather than a young man with his best years ahead, but he believes that these very changes call for the care of social medicine, so that the person healed of disease may be fully restored to normal living. In his climactic final chapter, "Social Medicine and Medical Education," the author contends that stress on disease and the treatment of disease precludes "the Hippocratic concern for health." He states his ideal: ". . . medical education envisaged in the gestalt of social medicine would include all the knowledges now taught: anatomy, histology, physiology, bacteriology, diagnosis, therapy, etc. Their orientation, however, would be radically altered." They would be presented "in relation to the living individual, as they bear upon his adventure of living"; education, therefore, would also have to include "dynamic, as distinct from descriptive, biology and its history; the history of medicine with emphasis on the fundamental ideas which inspired and motivated its different epochs; the sociology of communal life; the elements of anthropology; the elements of individual and group psychology. This curriculum would also include enough of philosophy to enable the student to understand and to deal with the problems of value judgments. For the physician needs must be not only a healer but also a counselor, and this function will be preeminent in social medicine." Social medicine cannot fit into the present form of curative medicine, yet curative medicine has a definite place in social medicine. The author is optimistic about the future of social medicine, because he believes that we are now witnessing a radical change in the practice of medicine. In clinical medicine and surgery, he claims, "the physician is becoming increasingly a middleman between the patient and the diagnostic laboratories . . . on the one hand, and the pharmaceutical houses on the other." This statement is least true, he says, in the fields of pediatrics and psychiatry, which are in the spirit of social medicine. One of Dr. Galdston's final statements is: "social medicine offers not only a logical but a most desirable resolution of the multiplex problems which now beset society and medicine." He and others interested in social medicine, particularly those in Europe, would reach a larger audience in the United States if they would find a substitute term for the adjective social.

These book reviews have been prepared by competent authorities but do not represent the opinions of any official bodies unless specifically so stated.

Streptococcal Infections. Edited by Maclyn McCarty. Symposium held at New York Academy of Medicine, February 25 and 26, 1953. Symposia of Section on Microbiology, New York Academy of Medicine, number 7. Cloth. $5. Pp. 218, with illustrations. Columbia University Press, 2960 Broadway, New York 27; Oxford University Press, Amen House, Warwick Sq., London, E.C.4, 1954.

The advent of the sulfonamides as therapeutic agents for the treatment of streptococcic infection dealt serious blows to fundamental studies of the biology, metabolism, and immunochemistry of the Streptococcus and to the natural history of diseases produced especially by beta hemolytic streptococci belonging to group A (Lancefield). Today many students graduate from medical schools without ever having seen a patient with erysipelas or scarlet fever. Fortunately for those who are interested in the biology of streptococci, there remain a number of investigators, such as Lancefield, Tillett, McCarty, Rammelkamp, Dingle, and others, who have an abiding interest in this field and who are continually advancing knowledge in it. Also it is fortunate that the section on microbiology of the New York Academy of Medicine decided that in 1953 a symposium should be held on streptococcic infections. The proceedings of this symposium, which cover the chemistry, metabolism, immunologic aspects, and the natural history of streptococcic infections and their sequelae, should be read by all medical students, and should be valuable to practicing physicians in bringing them up to date in an area that has been neglected in their thinking since sulfonamides and antibiotics have become commonplace. Physicians owe a great debt to the investigators who have made possible this interesting volume.

Chemical Pathways of Metabolism. Vol. I. Edited by David M. Greenberg. Cloth. $11. Pp. 460, with illustrations. Academic Press, Inc., 125 E. 23rd St., New York 10, 1954.

This is the first volume of a series dealing with the various intricate facets of biochemistry. Each chapter was written by an expert in the particular phase of metabolism under consideration. The thesis that pervades the book is that a closely similar pattern of chemical change is common to all forms of life. In addition to a discussion of metabolism per se with respect to fats, sterols, and carbohydrates, there are entire chapters devoted to such topics as energy levels in metabolism, enzymes, and the biosynthesis of saccharides. Both those indoctrinated in the intricacies of the "citric acid cycle" and novitiates will find a lucid discussion of the subject by Professor Krebs. The tricarboxylic acid cycle was first proposed in 1937 under the name citric acid cycle to describe the intermediary stages of oxidation of carbohydrate in pigeon breast muscle. All new substantiating evidence in support of the cycle, since its introduction, has been presented. Although biochemistry is an independent specialty, it has proved a valuable auxiliary scientific discipline to practitioners of medicine. Nutritional and metabolic problems have been accorded places of focal attention in view of the general accessibility of varied food products to the general populace, at least in the Western world, and the nutritional problems encountered in the relatively new field of geriatrics. This series on metabolism should help to keep the medical profession abreast of the rapid changes occurring in this branch of biochemistry. Many of these advances have come as a result of such new techniques as the use of radioactive tracer elements and chromatographic analysis in nutritional research.

Spot Tests. Volume I: Inorganic Applications. Volume II: Organic Applications. By Fritz Feigl, Eng., D.Sc., Laboratório da produção mineral, Ministério da agricultura, Rio de Janeiro. Translated by Ralph E. Oesper, Ph.D. Fourth edition. Cloth. $6.50; $6.25. Pp. 518; 436, with illustrations. Elsevier Press, Inc., 402 Lovett Blvd., Houston 6; 155 E. 82nd St., New York 28; 118 Spuistraat, Amsterdam C, Netherlands, 1954.

Fortunately for chemists, Dr. Feigl's zeal in developing new spot tests remains unabated, and he continues to publish his results in revisions of his original monograph. This edition is in two volumes because, for the first time, the material on spot testing organic compounds is extensive enough to require separate treatment. Each volume is complete in itself. Much of the work reported is not published elsewhere, but the work of others is not neglected, and the bibliographies are a valuable feature. The organization of the material is logical, directions for specific tests are clear, and the index appears to be exhaustive. The volumes are handsomely printed and are bound in flexible cloth. Dr. Oesper's translation is so literal that the work is difficult to read. This defect of the translation is made all the more apparent by contrast with the chapter on techniques for spot testing written in simple, idiomatic English by Philip W. West.

Cancer: Diagnosis, Treatment, and Prognosis. By Lauren V. Ackerman, M.D., Professor of Surgical Pathology and Pathology, Washington University School of Medicine, St. Louis, Mo., and Juan A. del Regato, M.D., Director, Penrose Cancer Hospital, Colorado Springs, Colo. Second edition. Cloth. $22.50. Pp. 1201, with 725 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1954.

This second edition is a thorough revision of the first. Certain chapters have been rewritten, and additions have been made to others. Part 1 of the text has an introductory chapter on cancer, and chapters on research (by Michael B. Shimkin), on pathology, on surgery (by Eugene M. Bricker), and on radiotherapy. Part 2 has chapters devoted to cancer of the skin, respiratory and upper digestive systems, digestive tract, genitourinary tract, male genital organs, female genital organs, mammary gland, and eye; tumors of the thyroid, mediastinum, and suprarenal glands; malignant tumors of bone; sarcoma of the soft tissues; Hodgkin's disease; and leukemia. Each cancerous disease is discussed in the general sequence of anatomy, incidence and etiology, pathology, clinical evolution, diagnosis, radiological and surgical treatment, and prognosis. The text has many charts, drawings, photographs, photomicrographs, and color reproductions. Many of the photographs and photomicrographs are of good quality. The broad scope of the text has resulted in a large book, which could be reduced in size without loss of essentials, by elimination of illustrations tha are highly diagrammatic and by condensation or deletion o parts of the text. The book is recommended to pathologists surgeons, and radiologists.

Anatomy of the Bronchovascular System: Its Application to Surgery. *By George L. Birnbaum, M.D., Chief, Surgical Unit, Veterans Administration Regional Office, Portland, Ore. Foreword by Evarts A. Graham, M.D. Cloth. $15. Pp. 300, with illustrations. Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1954.*

This monograph is thorough and competent. The anatomy of the tracheobronchial tree is discussed in minute detail with all of the possible variations. Similarly, the pulmonary vessels, both arterial and venous, are minutely considered, with the surgical application being paramount in each instance. Anomalies of the heart, pulmonary vessels, and other large vessels are considered together with the surgical application and surgical treatment. The book is well illustrated. There is an excellent chapter on experimental pulmonary vascular and experimental tracheobronchial operations and a complete chapter on the use of surgery for treating asthma. The last chapter consists of drawings from an original atlas of the pulmonary arteries and veins, based on 50 lungs from adult males, the dissection apparently having been done by the author. The monograph is an excellent reference book and should be in the library of everyone interested in cardiopulmonary disease.

The Macmillan Medical Dictionary. Edited by Sir Cecil Wakeley, Bt., K.B.E., C.B. [Published in England under title of "The Faber Medical Dictionary."] Cloth. $6.95. Pp. 471. The Macmillan Company, 60 Fifth Ave., New York 11, 1954.

Although there are several good English medical dictionaries, a new one is always welcome. This medical dictionary includes a number of good features: the definitions are clear and concise without involving obscure terms and unfamiliar words, most of them appear where one would first look for them, pronunciation is indicated simply, and derivations are given. A number of terms in frequent use have been omitted, such as nitrogen mustard, Papanicolaou technique, citrovorum factor, vectorcardiography, Sjögren's syndrome, and ventricular fibrillation. Since this dictionary is published in England as "The Faber Medical Dictionary," it was intended chiefly for British use, and in many instances the user may expect to find

British terms rather than those accepted in the United States. He also must remember that diphthongs change the spelling of familiar words, so that etiology becomes aetiology, all words beginning with "hem" are under "haem," and edema and esophagus appear under the letter "O." However, as a supplementary reference work this dictionary should prove useful to the physician and especially to lay workers in the field of medicine who require only brief definitions and a limited coverage of medical terms.

Biological Applications of Freezing and Drying. Edited by R. J. C. Harris, Research Fellow, British Empire Cancer Campaign, Institute of Cancer Research, London, England. Cloth. $10. Pp. 415, with illustrations. Academic Press, Inc., 125 E. 23rd St., New York 10, 1954.

This book gives a comprehensive report on various aspects of drying and related fields and, in particular, drying from the frozen state. Both theoretical and practical aspects are covered thoroughly. The topics discussed include historical background and development, theoretical and practical aspects, the preservation of blood products, antibiotics, mother's milk, foodstuffs, culture mediums, bacteria, viruses, and tissues. Other subjects are discussed in chapters on "The Effects of Residual Moisture in Frozen-Dried Material," "The Application of Freeze-Drying to Electron Microscopy," "Application in Morphological and Histological Studies of Tissues," and "Effects of Low Temperatures on Living Cells and Tissues." The topics are presented clearly. Various types of equipment are illustrated, and the critical conditions are evaluated. This book is highly recommended to anyone who wishes an introduction to this subject as well as to those who wish to add to their knowledge of it. It should also be valuable as a reference, as it is both authoritative and comprehensive. An author index and a subject index are appended.

The Kinetic Basis of Molecular Biology. By Frank H. Johnson, Henry Eyring and Milton J. Polissar. Cloth. $15. Pp. 874, with illustrations. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16; Chapman & Hall, Ltd., 37-39 Essex St., Strand, London, W.C.2, England, 1954.

The authors set forth the logical consequences of the hypothesis that two molecules in reacting chemically first form an "activated complex" or intermediate molecule with an average lifetime of the order of one ten-trillionth of a second. An opening chapter traces the history of experimentation and speculation, beginning with the work of Arrhenius in 1889. The remaining chapters explain the implications of the hypothesis in the biochemistry of luminescence, temperature effects, pressure effects, membrane potentials, transmission of nerve fibers, narcosis by anesthetics, and muscular contraction. The discussion is exhaustive and scholarly, and a reader who wishes to follow all of the text will find he needs a command of mathematics well beyond differential and integral calculus. An accurate bibliography, alphabetically arranged by authors' names, also serves as an author index, covers 85 pages, and is followed by a subject index. This book will be a necessary reference work for anyone doing fundamental research in biochemistry or biophysics.

Clinical Chemistry in Practical Medicine. By C. P. Stewart, D.Sc., Ph.D., Senior Biochemist, Royal Infirmary, Edinburgh, and D. M. Dunlop, B.A., M.D., F.R.C.P., Christison Professor of Therapeutics and Clinical Medicine, University of Edinburgh. Fourth edition. Cloth. $5. Pp. 320, with 27 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; E. & S. Livingstone, Ltd., 16 and 17 Teviot Pl., Edinburgh 1, Scotland, 1954.

In this book some space is devoted to a discussion of the meaning and statistical interpretation of normal values and to methods for the proper collection and preservation of body fluids to be tested by chemical methods. Succeeding chapters deal with water, electrolyte, and carbohydrate metabolism; tests of renal function; proteins of the blood plasma; tests of gastric, pancreatic, and hepatic functions; the cerebrospinal fluid; thyroid function; calcium and phosphorus; hormone abnormalities; and nutritional deficiencies. Two appendixes at the end provide (1) the specific procedures employed for the examination of the urine, including its quantitative analysis, and examination of gastric contents, blood, and feces, and (2) tables indicating normal and abnormal values for constituents of the urine and blood, respectively. Under the heading simple hematological examination, customary methods are described for determining the number and percentage of the formed elements. Although this book departs from medical biochemistry in minor respects, it cannot be regarded as adequate to replace books that cover the entire subjects of either biochemistry or clinical laboratory medicine. This will limit its usefulness except as a convenient supplement to larger works or in conjunction with separately presented courses dealing with biochemical procedures used in the clinical laboratory. The printing is excellent, and the binding is reasonably sturdy. The spelling of terms follows British custom. There is a general index at the end.

An Introduction to Bacterial Physiology. By Evelyn L. Oginsky and Wayne W. Umbreit. Cloth. Text, $6; trade, $7.25. Pp. 404, with 94 illustrations; including drawings by Evan L. Gillespie. W. H. Freeman and Company, 549 Market St., San Francisco 5, 1954.

The complexity of technical information presented in modern textbooks on bacterial physiology has precluded their general use by undergraduate students. The authors have designed this book to bridge the existing gap between general bacteriology and the more advanced information on bacterial physiology. The opening chapters are devoted to pertinent discussions on methods used in science, bacterial anatomy, and bacterial cytology and cytochemistry. Bacterial physiology is introduced in a section on population studies. Here the relations between organisms and their environment are brought out in discussions on growth, nutrition, genetics, and effects of chemical and physical agents. The fundamental principles of metabolism and the main lines of metabolic processes are treated in the next section. Details of reactions have been omitted as not within the scope of this book. Two interesting chapters follow on the physiology of organisms designated by the authors as The Self Reliants and The Dependents. The former are the chemosynthetic and photosynthetic organisms that are capable of utilizing inorganic materials, carbon dioxide, or light as their sole source of energy. The Dependents, which include bacteriophages, viruses, and rickettsia, must rely on living processes of other cells for their existence. The final section is concerned with the functions of the bacterial cell in changing environments. An annotated bibliography and a list of questions intended to stimulate the thinking of the reader are appended to each chapter. The authors have presented the subject matter in an attractive and readable form.

Social Science in Medicine. By Leo W. Simmons, Professor of Sociology, Yale University, New Haven, Conn., and Harold G. Wolff, Professor of Medicine (Neurology) Cornell University Medical College, New York. Cloth. $3.50. Pp. 254, Russell Sage Foundation, 505 Park Ave., New York 22, 1954.

Although the medical profession has never been unmindful of the relationship of social environment to illness, until relatively recently the related disciplines of sociology, social psychology, and social anthropology have been inadequately harnessed for purposes of medical research and practice. That these disciplines have now advanced to a point where fruitful collaboration between medical and social scientists is feasible is made evident by this book, which is itself the product of collaboration between a sociologist and a physician. The authors view the individual as an organism in his physical surroundings, as a group member in his society, and as a person in his culture and relate the impact of these surroundings to health and disease. They offer a framework for collaboration between medical and social science by clarifying social science concepts that have a bearing on medical practice and stress the need for research in the two fields. This book should prove useful to students in medicine and the social sciences, to lay persons who share responsibility for health and welfare programs, and to medical administrators, educators, public health officials, social workers, and nurses interested in the prevention and treatment of disease.

QUERIES AND MINOR NOTES

BUS DRIVERS AND CORONARY OCCLUSIONS

To the Editor:—*What is the prevailing opinion about returning to work a 50-year-old, slightly hypertensive stage driver who weighs 200 lb. (90.7 kg.) and is 5 ft. 9 in. (175.26 cm.) tall and who is required to drive a bus loaded with passengers on a highway for a six hour run? This man had a severe coronary occlusion two years ago and at present claims to be symptom-free, and his electrocardiographic changes have reverted virtually to normal.* *M.D., Oregon.*

Answer.—There is no prevailing opinion about such a problem, because it depends on the person's response. Exercise tolerance tests should be performed to determine the capacity to do work. An ideal course would be to test the patient repeatedly when he had resumed his activity, possibly comparing his performance at the beginning of the week, before a day's work, after the first day's work, and at the end of the week following the last day at work. Only in this manner could an accurate conclusion be reached. The intelligence of the patient enters into the picture. If he is an easily harrassed person of the emotional type, it would probably not be advisable to restore him to his original duties. However, if he were properly advised not to be hurried and not to make frequent jerking pulls on the steering wheel, he probably would be able to resume his previous occupation, since he is physically endowed with musculature that will permit him to do such work. The public liability risk is a difficult question to answer. It cannot be denied that the patient who has had a cardiac infarct once is more liable to have a second attack. However, the liability is least two years after an attack and becomes progressively greater until the next attack ensues. The question to decide under this circumstance would be whether the patient is a cooperative patient of such intelligence to carry out a reasonable program for preventing further attacks that involves certain dietary measures, evaluation of the recurrence of the symptoms of angina, and other therapeutic measures. Certainly, if all patients liable to heart attacks, cerebrovascular accidents, diabetic coma, and acute colic from calculi are deprived of their means of earning a living by eliminating all possible risks of public liability, the burden on our national economy will be great, and probably unjustifiably so. If the laws of the state of Oregon would permit the bus company to be penalized should such an accident occur, there is no other course for the bus company to follow than to refuse to hire the driver. If there are no such laws, he could be restored to work without undue criticism with a program of check-ups while on the job and a careful examination twice yearly. Railroad engineers have similar problems except for being harried by intimate contact with the passengers. Comparison with the railroad engineer brings up the question of the liability of the bus company for not developing a device that would shut off the engine and gradually apply the brakes if the driver suddenly becomes incapacitated.

SERUM SODIUM AND POTASSIUM DETERMINATION

To the Editor:—*Which apparatus, the Perkin-Elmer model 53-C, flame photometer or the spectrophotometer, Beckman model B, flame, is the better for the determination of sodium and potassium in the serum?*

Salvador Urzua L., M.D., Guadalajara, Jalisco, Mexico

Answer.—Both instruments mentioned are entirely satisfactory for the estimation of plasma or serum sodium and potassium. The Perkin-Elmer instrument uses an internal standard, which may be of advantage under certain circumstances. Comparisons of the two instruments indicate that both give results that are reproducible and in good agreement when the procedure is properly standardized with solutions of known composition.

ACRYLIC IMPLANTS

To the Editor:—*What is the present accepted opinion concerning the adaptability of acrylics as implants to correct defects? Are acrylics tolerated by the body tissues without foreign body reaction?* *Robert M. Colbert, M.D., Beverly Hills, Calif.*

Answer.—These questions in our present state of knowledge cannot be satisfactorily answered. Among the plastics that have been used within the human body are methyl methacrylate, acrylic, polyvinylpyrolidone, polyethylene, and nylon. Plastic materials vary widely in method of manufacture and may contain substantial amounts of plasticizers or additional chemicals. Their physical and other properties vary widely, and two different lots made by the same manufacturer are often far from identical. The surgeon must realize that acrylics or other plastic materials used in the human body are nonstandardized materials. Clinical experience with plastics in the human body gives conflicting evidence. Intraocular acrylic lenses have been used as a substitute for the lens of the eye for the past three and a half years, and over 150 successful operations have been reported, without evidence of excessive foreign body reaction. A plastic heart valve (Hufnagel) has been designed and used successfully in a number of patients, with apparently satisfactory two year results. The use of an acrylic replacement for the femoral head, recommended first by Judet, was accepted enthusiastically by American surgeons, but studies of end-results have shown a high percentage of failure due to sepsis, foreign body reaction, breakage, or excessive wear. Most of the larger clinics and hospitals have stopped using plastics for this purpose. Recently Oppenheimer has produced malignant tumors in the rat by implanting plastics of various types. There are no reported cases of malignant growths developing in a human being from the use of plastics, but excessive foreign body reactions may follow their use. There is no standard method of measuring foreign body reaction. The use of any plastic material in the human body must be regarded as an experimental procedure. Such materials should be controlled by careful physical, chemical, and animal tests before they are used in the human body.

References

Ridley, H.: Further Experiences of Intra-Ocular Acrylic Lens Surgery with a Report of More Than 100 Cases, Brit. J. Ophth. **38**: 156-162, 1954.

Oppenheimer, B. S.; Oppenheimer, E. T., and Stout, A. P.: Sarcomas Induced in Rodents by Imbedding Various Plastic Films, Proc. Soc. Exper. Biol. & Med. **79**: 366-369, 1952.

ERYTHEMATOUS LESION OF NOSE

To the Editor:—*A woman with an erythematous maculopapular lesion over the tip of the nose and a small, similar lesion in the nasolabial fold first noticed lesions of this type in the same location eight years ago. Because her physician was suspicious of this being tuberculous, she was hospitalized. An internist found no evidence of tuberculosis, and a dermatologist was consulted. He prescribed several remedies, but with the passage of time it became apparent that the lesions would appear only when this patient was exposed to sunlight or to heat, as when she cooked over a hot stove. For eight years she has been entirely free of lesions in the winter if someone else does her cooking, but this year, as in the past, on the first day that the sun was bright and she spent an hour outside hanging up her wash the lesions returned. I presume this is some type of physical allergy. The lesions are smaller and less erythematous since we have been prescribing cortisone ointment locally. Is there any other treatment for this condition?* *M.D., Pennsylvania.*

Answer.—Heliodermatitis, localized lupus erythematosus, and dermatitis due to heat are possibilities in this case. A histological examination might furnish useful information, but in any event the application of a sun-screen ointment or lotion would be worth while. Any product accepted by the Committee on Cosmetics of the American Medical Association would be suitable, as would 15% *p*-aminobenzoic acid in cold cream.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

PYKNOLEPSY

To the Editor:—*If a 10-year-old girl with pyknolepsy does not have attacks frequently enough to interfere with schoolwork, play, and other activities, is it necessary to give her anticonvulsant drugs? Is there any danger of untreated attacks altering the patient's prognosis, which is usually favorable after puberty? What drugs are available for the control of pyknoleptic attacks and what are the criteria for choosing one of these drugs, considering the therapeutic goal to be achieved and the toxic hazards in its use?* *M.D., Michigan.*

Answer.—In general, epileptic seizures of any sort should be banished. If the child does not have daily attacks, the diagnosis of pyknolepsy (petits or petit mal) is questionable, especially if not confirmed by the demonstration of three-per-second spike-wave formations in the electroencephalogram. If attacks do recur daily, an accident while the girl is crossing the street or swimming is possible. If attacks persist through adolescence, problems related to automobile driving and social acceptance will then multiply. Theoretically at least, the underlying dysrhythmia and the attacks are controlled more easily if treated early. When petit mal occurs alone, convulsions follow in later months or years in about one-half of the patients. Possibly this is more likely if the petit mal attacks and the attending dysrhythmia have not been disposed of, especially if the spike-wave formations display multiple spikes. Anticonvulsants are of little or no value for control. On the other hand, some of the antipetit-mal, or spike-wave, drugs may at times augment convulsions. Available drugs for which favorable results have been reported are, in the order of decreasing effectiveness: trimethadione (Tridione), paramethadione (Paradione), phenacemide (Phenurone), Milontin (*N*-methyl-α-phenylsuccinimide), Diamox (sulfonamide inhibitor of carbonic anhydrase), quinacrine (Atabrine), caffeine, amphetamine, mephobarbital (Mebaral), and glutamic acid. The first three require close and conscientious supervision. The ketogenic diet may be used alone or combined with a drug. For other opinions and for details of administration, recent literature should be consulted.

CAFFEINE IN BEVERAGES

To the Editor:—*In answering a patient's queries in regard to beverages for nervous children, I would like information as to which carbonated beverages contain caffeine and the approximate amount of caffeine in each. Beverages common in this locality are Coca-Cola, Dr. Pepper, 7-Up, Pepsi-Cola.* *M.D., Texas.*

Answer.—According to information in the files of the Council on Foods and Nutrition, all cola-type carbonated beverages contain caffeine. The average is probably around 40 mg. per 6 oz. (about 177 ml.). This compares with about 120 mg. per cup for average coffee. Of those beverages mentioned, Coca-Cola and Pepsi-Cola are the only ones containing caffeine. Both Dr. Pepper and 7-Up contain fruit flavoring, which presumably has no caffeine.

BILIARY CALCULI

To the Editor:—*A 23-year-old uniparous woman recently underwent laporatomy because of acute upper abdominal pain. Acute pancreatitis was discovered. About six weeks later autopsy revealed a mulberry calculus, 1.5 cm. in diameter, containing radiate yellow-brown striations. Is it possible that this calculus developed between the operation and the autopsy? What is the duration of the development period of pure, mixed, and combined biliary calculi?* *M.D., Pennsylvania.*

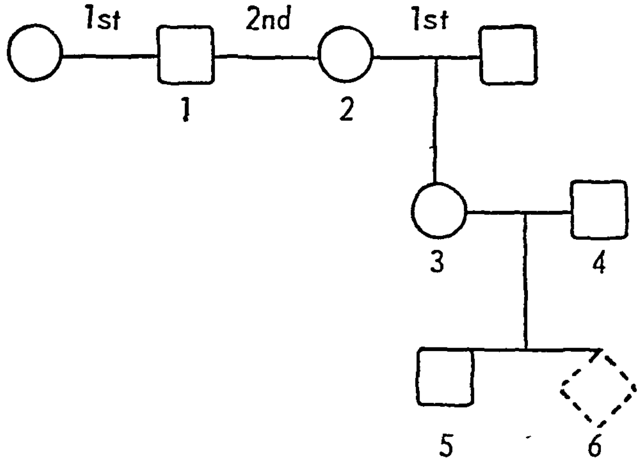
Answer.—The location of the mulberry-shaped gallstone found at autopsy is not given; it probably was present at the time of the laparotomy and was a causative factor of the acute pancreatitis. Biliary calculi vary greatly in the time required for their development. Among the factors that determine their development are the nature and quantities of the materials coming from the liver, the pH of the bile, the concentrating ability of the gallbladder, the size of the extrahepatic ducts, and the presence or absence of obstruction and infection of the ducts.

MARITAL RELATIONSHIPS

To the Editor:—*Kindly let me know the marital relationship of these persons: A widower (1) marries a widow (2) who is the mother of one married daughter (3) whose husband (4) and herself (3) are parents of a young boy (5) and expecting another child in the future (6). What are the relationships of daughter (3) and her husband (4) and young boy (5) to this man (1)? There is nothing of a legal nature involved in this situation. Also what will be the relationship of newcomer (6) to this man?* *A. E. Wanderer, M.D., Oak Park, Ill.*

This inquiry was referred to two consultants, whose respective replies follow.—Ed.

Answer.—The relationships between the persons mentioned in the question may be readily visualized with the aid of the following diagram:



It may be seen from this diagram that persons no. 3, 4, 5, and 6 are not biologically related to person no. 1, but that 1 is related to 3 as stepfather to stepdaughter; 1 is related to 4 as stepfather-in-law to stepson-in-law; and 1 is related to 5 and 6 as stepgrandfather to stepgrandchild. The degree to which civil law recognizes these latter relationships varies considerably from state to state, but, as a general rule, the last two relationships are unrecognized whereas with regard to the first it may be stated that the legal rights of a stepchild, with respect to a stepparent, are less than the legal rights of an adopted child with respect to a foster parent. Canon law, on the other hand, is somewhat more specific, although these relationships are defined only with respect to the act of marriage. Canon law proscribes marriage between persons related as 1 and 3, but where sex of the persons involved is appropriate, there is no proscription on persons related as 1 and 4 or 1 and 5.

Answer.—Person no. 3 is the stepdaughter of person no. 1. The only relationship that 4 can claim is that of husband of the stepdaughter. The relationship of 5 and the prospective 6 is that of stepgrandchildren, but such a relationship has no real meaning.

UROGRAPHY

To the Editor:—*Is there any preparation that is orally administered for urography today?* *L. Edward Giovine, M.D., Woodside, N. Y.*

Answer.—There is no preparation for urography that can be administered orally. The original excretory urographic medium, which was marketed under the name Uroselectan (sodium 5-iodo-2-pyridone-*N*-acetate), and iodohippurate sodium (Hippuran), were absorbed from the gastrointestinal tract when either taken by mouth or administered by rectum and were excreted by the kidneys in concentrations that would yield satisfactory excretory pyelograms in a majority of instances. When the contrast medium was administered by either of these routes, however, its rate of absorption and urinary concentration was variable, so that the method never received widespread acceptance.

DEFORMITIES IN STILLBORN INFANT

To the Editor:—*A primipara recently was delivered of a dead, deformed baby. She and her husband are in excellent health. They are both in their early 30's, both have Rh positive blood, and neither of them has had a venereal disease. The infant died about two days before delivery. The deformities consisted of: absence of nose, cleft palate, and harelip. There was no history in either family of any deformed babies. The husband's sperm count was 350 million spermatozoa per cubic centimeter with 25% actively motile, 15% sluggishly motile, and 60% nonmotile. About 50% showed morphological abnormality. There were 4 to 8 epithelial cells and 2 to 10 pus cells per high power field. 1. What could be the reason for the infant's deformity and death? 2. What are the chances of future abnormal infants? 3. Is there any treatment to improve the condition of the spermatozoa?*

M.D., Washington.

This inquiry was referred to two consultants, whose respective replies follow.—Ed.

Answer.—1. In the absence of any history of communicable disease during the gestation period, the deformities found in the present case would have to be attributed to hereditary factors governing fetal development. The principal difficulty experienced here is the failure of midline fusion, the cause of which is not known. The death of the fetus may have been due to defect in formation or fusion of the internal organs, such as a horseshoe kidney. These factors might have been revealed had an autopsy been done. 2. It is possible but still unproved that a sperm defective in some characteristics can be potent enough to bring about a pregnancy. It is entirely conjectural how far such a pregnancy will proceed and, if it should go to term, whether or not the fetus will be normal. Whether or not the nonmotile sperm population has any effect on the pregnancy cannot be stated with certainty inasmuch as the effect of the metabolic products of such sperm on fertilization, nidation, and gestation has not yet been determined. If an imperfect sperm successfully fertilizes a normal ovum or if one of the normal sperm fertilizes an imperfect ovum, abnormalities are possible. 3. The husband should be treated with a diet rich in vitamins and trace minerals. Supplementary vitamins B complex and C are frequently useful. Thyroid extract is indicated if hypothyroidism is apparent. Coital frequency and technique should be reviewed and adjusted, and instruction should be given in hygienic living habits.

Answer.—1. The case history reveals no apparent reason for the infant's deformity and death. It is not stated whether there was any acute illness in the first trimester of this patient's pregnancy. From a recent report by Drs. Kaye, Rosner, and Stein (*Am. J. Obst. & Gynec.* **65**:109 [Jan.] 1953), the most pertinent factor in similar abnormalities was viral diseases. Although rubella has been the chief viral disease implicated in such abnormalities, other viral diseases, especially mumps, may cause similar involvement. There is no evidence that 50% abnormal spermatozoa in semen has any bearing on the outcome of the pregnancy. Abnormal spermatozoa are incapable of fertilizing ova. 2. This patient runs no greater risk of future abnormal pregnancies than does any other multiparous woman. 3. The only treatment that is suggested for the husband would be improvement of general hygienic habits, high vitamin and high protein diet, and thyroid if indicated. He should be strongly advised to stop smoking for at least one month prior to attempting impregnation.

RETINAL HEMORRHAGE

To the Editor:—*Is retinal hemorrhage ever due to exposure to chlorinated aromatics, such as Halowax or chlorinated diphenyl?*

M.D., Indiana.

Answer.—Retinal hemorrhage is not known to be a characteristic response to the action of any chlorinated aromatics. The chemicals mentioned possess distinctly harmful properties, but these properties lead to yellow atrophy of the liver or to chloracne as predominant features. If, as is conceivable, retinal hemorrhage did arise in the course of widespread damage, more characteristic injury would have occurred prior to the retinal hemorrhage and would have attracted diagnostic consideration.

EXTREME MALNUTRITION

To the Editor:—*I recently saw a 7-year-old boy who weighed 11 lb. (4,989 gm.). This child was the ninth of 12 children. The mother received no prenatal care but was delivered by a physician. The mother was 32 years old when she delivered the child, and the father was 52 years old. There was no history of birth injury. The patient is unable to sit up and retain food. When he was admitted to the hospital on Dec. 1, 1949, he weighed 8 lb. (3,628 gm.), and when he returned from the hospital on Jan. 8, 1950, he weighed 11 lb. 12 oz. (5,330 gm.). His diet on discharge consisted chiefly of soybean emulsion, which he retained. He appeared to be improving physically and mentally. On May 10, 1950, he weighed 14 lb. 3 oz. (6,436 gm.). The diagnosis at the orthopedic clinic, June 2, 1950, was malnutrition, retarded development, mild talipes equinus varus bilaterally, and mental retardation. The child continued to retrogress. Living conditions were bad; the home and child were usually dirty. On Dec. 22, 1953, the child was in extremely bad condition and not eating. He was hospitalized from Dec. 23, 1953, to Jan. 7, 1954, and put on a diet of soy bean emulsion, vegetables, fruit juices, and cereals. The mother again tried to follow instructions. On March 17, 1954, the child weighed 11 lb. 4 oz. (5,141 gm.). Other children in the family are apparently normal. What is the diagnosis?* *M.D., Virginia.*

Answer.—Without knowing the measurements of this child and additional data, it is impossible to arrive at a satisfactory diagnosis. Children suffering from premature senility, otherwise called progeria (Thomson and Forfar: *Arch. Dis. Childhood* **25**:224 [Sept.] 1950) fail to grow normally but usually grow more than the child described. Also, the prematurely senile child is usually normal mentally. The smallest child seen by this consultant weighed 10 lb. (4,536 gm.) at 2½; 19 lb. (8,618 gm.) at 7; and 24 lb. (10,886 gm.) at 10 years of age. Another child weighed less than 20 lb. (9,072 gm.) at 23 years of age. At this time it was still in a crib and was being fed from a bottle. Both children were inmates of institutions for the care of the feebleminded. Extremely limited growth is so uncommon that no figures are available regarding its frequency.

ENLARGED OVARY

To the Editor:—*In* The Journal *for Aug. 7, 1954, page 1378, a physician inquires what to do with a woman 41 years of age who has an enlarged ovary. I take exception to the answer given in several particulars. Generally, most ovarian swellings are corpus luteum cysts and disappear of their own accord. If, however, they remain after eight weeks and particularly if the ovary enlarges, then the patient should be operated on. I agree with you that a specialist in vaginal surgery may occasionally open the cul-de-sac and examine the ovarian swelling and that if it proves to be a simple cyst the contents may be aspirated and the cyst resected. However, the inability of a surgeon to do what is indicated is never an excuse for him to do other surgery simply because he cannot perform a particular operation. The abdomen should not be entered, however, with the preconception that the ovary has to be removed, for the swelling may prove to be a resectable tubo-ovarian cyst of inflammatory origin or a simple cyst, a dermoid, or a cyst produced by an endometrioma, all of which are capable of resection and do not necessarily require removal of the ovary. Particularly is it inadvisable to open a tumor that may prove to be malignant; such a tumor should be removed, if its nature cannot be determined, and its malignancy determined in the laboratory.*

N. Sproat Heaney, M.D.
435 S. Curson Ave., West
Los Angeles 36.

THE JOURNAL

of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL 156, NO. 9 CHICAGO, ILLINOIS OCTOBER 30, 1954

COPYRIGHT, 1954, BY AMERICAN MEDICAL ASSOCIATION

A CRITICAL ANALYSIS OF THE FRACTURE PROBLEM

CHAIRMAN'S ADDRESS

Charles N. Pease, M.D., Chicago

Although the precise number of fractures that annually befall the American people is unknown, available statistics indicate that it approaches 2 million. Factors largely responsible for a steadily mounting increase in fractures include our evolution from a semiagrarian economy to a highly industrialized society, the automobile, and the mass participation of Americans in sports and athletics. It is understandable that most fractures are treated by general practitioners and not by orthopedic surgeons, because there are so many of the former and so relatively few of the latter. The degree of aptitude shown by general practitioners when managing fracture cases depends in one sense on how well orthopedic surgeons teach and indoctrinate nonspecialists in the principles of rational fracture treatment. The opportunity that orthopedic surgeons have today to instruct their fellow physicians is limitless. Poor orthopedic thinking leads to indifferent fracture management, while sound thinking about fractures leads to desirable clinical results.

PRESENT-DAY MANAGEMENT OF FRACTURES

Despite dramatic advances in contemporary orthopedic surgery as the result of the rational use of various types of internal splinting in which pins, screws, plates, and other devices are used for the fixation of fractures, it is an axiom among experienced clinicians that whenever possible the closed reduction of fractures is still the most effective and most desirable procedure in daily, routine practice. Nevertheless, the indiscriminate tendency to employ the open surgical reduction method in the treatment of fractures of the long bones of the body has become so pronounced in some quarters as to constitute a cause for alarm unless it is reversed.

Advantages that ordinarily become evident in well-indicated open reduction cases are quickly neutralized and even rendered negligible by misapplication in poorly indicated cases. The reasons for this undesirable state of affairs revolve about a number of questions. Is it because the art and skill associated with the closed reduction of a fracture are slowly being lost or discarded? Is it because of medical incompetence or indifference? Is it due to impatience? Is it because surgical procedures are more dazzling and often more remunerative? Or can many of the deficiencies in the present-day management of fractures be attributed to faulty teaching and training?

Although the approximation and fastening of fragments of bone is obviously more complex than the repair of a broken leg of a chair, it is astonishing how some surgeons make invidious comparisons between the leg of a human being and the leg of a chair by employing pins, screws, internal splints, or other devices. Claims to the contrary, the use of internal mechanical fixation does not assure solid union of the bone. Because of these devices many physicians have been encouraged and emboldened to regard a fracture with displacement as a fertile field for surgical intervention. The desire to perform open reduction is so strongly ingrained in some surgeons that they ignore, intentionally or unintentionally, certain pertinent facts; namely, that (1) bone is living tissue; (2) the soft tissue adjacent to a bone already fractured has also been traumatized; (3) additional injury to tissue brought about through unnecessary surgical intervention will only serve to embarrass the forces of repair and delay the restoration of normal function, and (4) infections not infrequently occur despite the use of antibiotics.

Most orthopedic surgeons are aware that only a limited amount of skill is required to perform an open reduction of a fracture, especially if the bony fragments are in plain view and can be grasped either by suitable instruments or by the fingers. Contrariwise, competence in utilizing the closed method effectively requires not only knowledge of mechanics but considerable familiarity with anatomy, physiology, pathology, and the basic engineering principles involved in reduction.

There are a few surgeons who, by virture of their aggressiveness and persistence, exercise a disproportionate amount of influence in promoting the injudicious use of appliances in many questionable circumstances. Owing to complacency many surgeons may be considered guilty for having approved by default certain questionable

---

Read before the Section on Orthopedic Surgery at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 23, 1954.

methods and procedures for the treatment of fractures and also for having ignored many sound orthopedic principles that were formulated decades ago by predecessors in the specialty. One evil, for example, is widespread; namely, the promiscuous use of medullary nails in fractures of all the long bones of the body, despite the fact that the use of the medullary nail has been to date proved acceptable only in the case of certain types of fracture of the femur alone.

An obvious reason for the growing neglect of the closed reduction method of treating fractures is the lack of thorough training or actual inability of many younger surgeons to reduce a fracture without relying on surgical intervention. A second reason for neglect of the closed method is found among the unscrupulous minority who are able to obtain larger fees for their services when the magic word surgery is mentioned to patients. In this connection, I would like to direct attention to the practice of some insurance carriers whose accident policies allow larger fees when fractured bones are reduced by surgical methods. A third factor apparently stems from psychological needs—the wish to satisfy the ego by introducing a "gadget" for use in open reduction procedures and to exploit the device when it is described in a so-called scientific article, which, if the truth be stated bluntly, often has the appearance more of a testimonial type of advertisement than of a contribution to medical literature. Here, too, it is impossible to ignore the ambitious salesman or distributor, whose sales prospects are enhanced by the mere mention of the particular surgeon who uses in practice an appliance manufactured by the firm that the salesman represents.

Fracture of a bone with no displacement but with the overlying soft tissue only slightly lacerated is frequently called a compound fracture. An unusual amount of skill is not ordinarily required for the management of this type of injury. Yet, remuneration is greater from insurance carriers when applied to this particular circumstance than it would be for the treatment of a severely comminuted fracture with no associated disturbance of the skin.

Many of the unrestrained claims made by some of the more enthusiastic protagonists in behalf of the open reduction method have not stood the test of time. In the repositioning of fragments by surgical means the patient is certainly entitled to a reasonable anatomic alignment, but unfortunately too often this is not the case. Despite widespread use of antibiotics, infections still occur after open reduction. Moreover, many cases of nonunion of fractures occur after surgical intervention in fresh fractures, a procedure undertaken precisely because it has been claimed that surgery would prevent nonunion.

The open method of reduction of fractures of the shafts of the long bones used in children is most unfortunate. The indication for such procedures is so rare that this type of treatment should almost never be employed. A fracture of a bone in a child is always accompanied by overgrowth of this bone, and if metal is used in the ill-advised open method of reduction, overgrowth of the bone frequently occurs to such an extent that it is detrimental to the welfare of the child.

NUTRITION

Little attention has been paid by the American medical profession to the problem of nutrition in fracture cases. While bone healing is normally completed within 16 weeks, deficient nutrition often delays the reparative processes. In general, the essential elements necessary for new bone formation and the healing processes have been neglected in both young and old patients. The healing response of bones would be enhanced considerably if *all* physicians would simply remember to prescribe a diet high in ascorbic acid, minerals, and other essential elements necessary for normal physiological activity. It must be kept in mind that, in the aged, digestive disturbances interfere with the utilization of necessary calcium and vitamin D, and a deficiency of protein impairs bone metabolism.

PHYSICAL THERAPY

Although many types of physical therapy apparatus are currently in existence, nothing will restore function to an extremity as effectively as its active use. Internal physiological activities that occur in an extremity are stimulated by active external participation of the extremity itself. It has never been generally realized, for instance, that passive physical therapy, as applied in the treatment of fractures, has very limited value. Actually, no one has ever produced convincing evidence to prove conclusively that massage, passive motion, or the application of local heat restored function to an extremity more rapidly and effectively than would be the case if these agents had not been administered. Their value, I am convinced, is chiefly psychological.

In an impartial study of 2,000 patients with Colles' fracture drawn from the New York State Workmen's Compensation Board,[1] the investigators arrived at the following conclusions: "Physical therapy was given in all but 3.4 per cent. of a total of 1,440 cases, with 684 cases in which the type of treatment was not reported. While every conceivable form of therapy from hot soaks to histamine iontophoresis was used, the most popular was diathermy. The frequency of treatment most often noted was three times a week, which is the maximum for which fees are authorized under the Workmen's Compensation Law. The duration of treatment varied from 0.5 to twenty-four months, with a mean or average of 4.0 months and a median of 3.5 months. Although no statistical analysis of type or duration of physical therapy in relation to final disability could be made, it is our impression that it did not play any appreciable role in altering the final loss of function."

ROLE OF THE RADIOLOGIST

Closer cooperation between physicians who treat fractures and radiologists who detect their presence on roentgenograms is always desirable to advance the welfare of the many thousands of patients for whom the two groups share a mutual responsibility. While the relationship between radiologists and fracture-treating surgeons is most satisfactory, there are occasions when a small, inexperienced group of radiologists expresses its views in terms of faulty, injudicious orthopedic thinking. Contrary to what a given orthopedic situation may actually require for purposes of correction, these few radiologists frequently influence physicians who are not well oriented orthopedically to think of clinical results only in terms of obtaining unduly precise anatomic alignment in all types of fractures under all circumstances.

---

[1] Bacorn, R. W., and Kurtzke, J. F.: Colles' Fracture: A Study of 2,000 Cases from the New York Workmen's Compensation Board, J. Bone & Joint Surg. 35A: 643 (July) 1953.

Much of the advice offered unfortunately revolves about the alleged need for remanipulation and for open reduction of fractures–advice that is often detrimental to the welfare of many patients. Obviously, the basic objective of all medical participants dealing with fractures should be to treat patients and not to treat roentgenograms. Perfect anatomic alignment as pictured on roentgenograms has at no time proved an adequate substitute for proper function of an extremity. It is precisely with he question of function that all patients are primarily oncerned. The indisputable facts are that we need never eek to improve the health status of roentgenograms; owever, we are always obliged to strive vigilantly for he improved welfare of the patient with a broken bone, s expressed in concrete terms of restored maximum unction. Roentgen therapy has been of inestimable value n shortening convalescence in those fracture cases in hich stiffness of the joints has been a problem.

HIP PROSTHESES

Reliable data I have received indicate that in the Jnited States about 500 hip prostheses are inserted ach month. At present, the consensus of sound medical pinion is strongly opposed to the use of prosthesis in paients with fracture of the hip. I am convinced that hip rostheses occupy little or no useful role in the treatnent of fractures of the hip, be they old or new. Living one tissue will not unite with foreign material to form homogeneous mass. The knowledge that there are bout 30 different kinds of hip prostheses in current use ndicates the inadequacy of most of them and raises considerable doubt about the efficacy of the others. I wish o reiterate a note of warning concerning glowing reports from follow-up studies of six months to one year or even to two years, by stating that hip prosthesis should be considered not acceptable for a place in the armamentarium of the orthopedic surgeon as a method of treatment of fracture of the hip.

The use of bone-bank bone—which is dead bone—in the treatment of fresh fractures or those with nonunion has such limited use that a blanket recommendation for its use cannot be made.

TEACHING FRACTURE TREATMENT

The promulgation and widespread adoption of sound, acceptable orthopedic concepts is imperative if the rational management of fractures in the United States is to make substantial headway. In great measure, this can be facilitated by basic changes in the methods of teaching orthopedic surgery, on both undergraduate and postgraduate levels. The young orthopedic surgeon must be guided in fracture treatment as he gains experience. Since most fractures in the United States are treated by general practitioners, it is the obligation of recognized orthopedic surgeons to teach nonspecialists at county medical society meetings the importance of instituting orthopedic programs to meet the needs of the general practitioner. In order that the two groups may work effectively together toward a common objective, the participants in the program should first be consulted as to the requirements of the medical audience. The county medical society meeting is an excellent place to conduct "fracture clinics" and to establish the importance of down-to-earth question-and-answer sessions.

While it is true that a number of orthopedic groups throughout the country have at one time or another attempted to foster an improved orthopedic methodology, their efforts, although successful in one sense, have never been as widespread and deserving as the needs of the situation demanded. Nonetheless, the goals have been commendable, even though the achievements have been limited. I would like to propose an expansion of the aspirations of my predecessors in the field of orthopedic education. The various heads of representative orthopedic groups should be urged to establish liaison with county and local medical societies in an effort to develop programs wherein the teaching of proper fracture management is brought directly home to general practitioners in their own communities. Establishment of such meetings, by attracting orthopedic specialists to the area, would bring many family physicians into the main stream of modern orthopedic knowledge. Attempts to induce physicians to travel hundreds of miles to attend specialized orthopedic meetings or conventions have, at least in the past, often been characterized by indifferent attendance. If more specialists would go out of their way to reach the general practitioner in his own locale, it is not too much to expect that the quality of fracture treatment in the United States would be enhanced immeasurably.

104 S. Michigan Blvd. (3).

Abnormal Neutrophil Polymorphs.—The abnormality of the polymorphonuclear leukocytes which is now known as the Pelger-Hüet anomaly is characterized by a decrease in the number of nuclear lobes in the neutrophil polymorphs, most of the cells having uni- or bilobed nuclei, seldom trilobed and almost never more. The distribution of the lobes in the normal shows a maximum number of neutrophils with three lobes, fewer with two and four and an occasional cell with five. When Pelger first reported this unusual diminution of the lobes in the neutrophils he seems to have regarded it as a peculiar type of toxic shift to the left and suggested that it was a manifestation of tuberculosis and a bad prognostic sign. It remained for Hüet (1931, 1932) to show that this distribution of the lobes could occur in healthy people as an inherited anomaly. . . . The diagnosis of the Pelger-Hüet anomaly is made by examination of a stained blood smear, and . . . depends on the overwhelming predominance in the Pelger-Hüet anomaly of bilobed neutrophils which have well-defined rounded nuclear lobes with a mature chromatin structure. . . . The diagnosis is established when the condition is discovered in another member of the family. . . . The Pelger-Hüet anomaly behaves as a regular dominant with complete penetrance. . . . Although this condition is thought to be of extreme rarity, it may well be that it is often overlooked.—William M. Davidson and others, The Pelger-Hüet Anomaly: Investigation of Family "A," *Annals of Human Genetics,* July, 1954.

MEASURES THAT HAVE PROVED HELPFUL IN BACKACHE

Frederic J. Kottke, M.D., Minneapolis

Backache is one of the commonest disabilities of adulthood. It is incapacitating for almost every type of activity, and it also interferes with adequate rest. Yet, for a number of reasons this disability may not be treated adequately. Because backaches are common but often temporary, the patient may desire to avoid extensive or expensive diagnostic procedures in the hope that the pain will disappear spontaneously. Low back pain is infrequently associated with fatal disease, so the patient believes that he is justified in temporizing. This pain results from a number of conditions, and the differential diagnosis may be difficult. Extensive diagnostic procedures often prove inadequate to locate the lesion. Bony anomalies, bony defects, and fractures will not be discussed here, as an adequate discussion of each of these conditions would require a lengthy paper. The diagnosis is made by roentgenography and treatment depends on the abnormality found in each case. Treatment of rheumatoid spondylitis also requires more consideration than can be given here. Usually these conditions become self-evident with a careful examination of the patient. This paper is primarily concerned with changes of or damage to the connective tissues of the back and the means of providing relief from pain and restoration of function.

After the description of the herniated intervertebral disk as a clinical entity causing low back pain and sciatica, by Mixter and Barr [1] in 1934, there was an increasing tendency to attribute low back and sciatic pain to this condition or to a degenerated intervertebral disk. Hyndman,[2] in 1946, suggested that the commonest cause of chronic pain low in the back was a disk lesion correctable by surgery. If such a hypothesis were true and excision of the offending disk were the effective treatment, most patients with backache should come to early surgery. Other careful observers [3] emphasize that a degenerating or herniated disk may be a frequent cause but only one of many causes of low back pain. Success in relieving low back and sciatic pain by surgical removal of a herniated nucleus pulposus depends on the accurate diagnosis of true herniation. Furthermore about 40% [4] of the patients who have a herniated intervertebral disk removed surgically will continue to have low back pain because of continuing derangement in the back. The abrupt or gradual collapse of the intervertebral disk after removal of the nucleus pulposus results in unusual stresses on surrounding ligaments and joints and possibly pressure on nerves. These stresses and pressures are responsible for symptoms remaining after removal of the nucleus pulposus. Balanced against this must be the observation that almost all patients with disk lesions recover partly or completely after conservative treatment alone.[3b]

MUSCULAR SPLINTING

Adequate treatment for low back pain caused by derangement of joint structures or abnormal pressures or stresses in connective tissues depends on the understanding of the physiological mechanisms involved. When there is trauma or irritation of the ligaments, fascia, muscles, synovia, or periosteum producing pain in the back, an immediate reaction occurs with contraction or "splinting" of the muscles of the area to immobilize the back. This splinting is a reflex response to the pain stimulus, which is increased by the voluntary attempt of the patient to avoid pain by holding himself immobile. The conscious and unconscious immobilization of the back makes finding the source of irritation difficult. Deep pain sensation is poorly localized.[5] Pain fibers ending in deep fascia, muscles, ligaments, periosteum, or even viscera appear to synapse into common paths in the spinal cord so that the sensation of deep pain is diffuse rather than discrete. The site of the stimulus causing deep pain usually cannot be located more closely than in the area innervated by one segment of the cord. Projection of the sensation of pain is diffuse to all areas receiving sensory innervation from that segment of the cord. Deep pain arising in the back is felt diffusely rather than locally in the back and also is referred through the anterior primary divisions of the spinal nerves to the lower extremities. In addition, pain arising in the viscera may be referred to the back.[6] There may or may not be pain sensation referred to the actual site of irritation. The pattern of innervation of the back increases the difficulty of locating the site of the injury. Sensory nerve fibers to the extensor muscles of the back and the vertebrae in the posterior primary division of the spinal nerves overlap two to three segments in the lumbar and lumbosacral area.[7] There is a similar overlap in the sensory distribution in the anterior primary division to the muscles of the ventral trunk and lower extremities. To increase the complications of this problem, the distribution of the motor nerves shows a similar overlap of several segments. The reflex response to the pain therefore may be widespread muscular contraction.

Muscular splinting immobilizes the back, increases the tension on the intervertebral disks and joints, interferes with circulation, increases the metabolism of the muscles of the back, and causes fatigue and accumulation of metabolites in these continuously active muscles. Each of these responses in itself produces pain in the

---

From the Department of Physical Medicine and Rehabilitation, University of Minnesota Medical School.

Read before the Section on Physical Medicine and Rehabilitation at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 24, 1954.

1. Mixter, W. J., and Barr, J. S.: Rupture of the Intervertebral Disc with Involvement of the Spinal Canal, New England J. Med. **211**: 210-215 (Aug.) 1934.

2. Hyndman, O. R.: Pathologic Intervertebral Disk and Its Consequences: Contribution to Cause and Treatment of Chronic Pain Low in Back and to Subject of Herniating Intervertebral Disk, Arch. Surg. **53**: 247-297 (Sept.) 1946.

3. (*a*) Barr, J. S.: Low-Back and Sciatic Pain: Results of Treatment, J. Bone & Joint Surg. **33A**: 633-649 (July) 1951. (*b*) Armstrong, J. R.: The Causes of Unsatisfactory Results from the Operative Treatment of Lumbar Disc Lesions, ibid. **33B**: 31-35 (Feb.) 1951.

4. O'Connell, J. E. A.: Protrusions of the Lumbar Intervertebral Discs: A Clinical Review Based on Five Hundred Cases Treated by Excision of the Protrusion (Hunterian Lecture), J. Bone & Joint Surg. **33B**: 8-30 (Feb.) 1951.

5. Lewis, T.: Pain, New York, the Macmillan Company, 1942.

6. Wolff, H. G., and Wolf, S.: Pain, American Lectures in Physiology, Springfield, Ill., Charles C Thomas, Publisher, 1948.

7. Roofe, P. G.: Innervation of Annulus Fibrosus and Posterior Longitudinal Ligament: Fourth and Fifth Lumbar Level, Arch. Neurol. & Psychiat. **44**: 100-103 (July) 1940. Lewis.[5]

muscles and joints of the back and sets up a secondary reflex reaction that aggravates the initial muscular splinting. After a few hours of such a response, it is difficult to determine which was the primary reaction and which was secondary.[6] At such a time almost any attempted active motion of the back, and often of the hips and lower extremities, initiates the reflex splinting. Such *splinting may be the response to attempted motion with* or without consciousness of pain. Examination of the patient is incomplete because all motions are restricted by splinting. Until this splinting or reflex guarding reaction can be relieved, it is not possible to assess the degree of the initial injury. Referred pain can occur from injury to deep tendons, ligaments, or periosteum that may be indistinguishable from the pain resulting from irritation of a nerve trunk. For this reason, treatment aimed initially at support of the injured part and relief of the secondary effects of the muscular splinting and its concomitant changes is of considerable benefit for backaches due to many causes.

ASPECTS OF TREATMENT

The muscular splinting occurring after trauma to the back with tears of the ligaments, muscles, fascia, or annulus fibrosus of the intervertebral disk serves the purpose of immobilizing the injured part until healing can occur by the formation of a firm scar. This scar should just replace the defect in the injured tissue. If too much motion occurs, the resulting scar is too wide, and there is instability or bulging. If the injured parts are approximated too closely, the scar is too short, so that limitation of motion results. Scar tissue is usually less flexible and less tough than normally developed connective tissue. When it causes limitation of motion of the back, it is subject to frequent stress and is likely to be torn again; therefore, tissue that heals in such a way as to produce restriction of motion is subject to reinjury. The desired goal in healing following a back injury is the restoration of continuity of the damaged connective tissue to provide stability but not restrict motion to the extent that the scar is subject to reinjury. Treatment, therefore, has a number of aspects: (1) adequate protection of the injured area to prevent further injury; (2) analgesia for relief of pain; (3) promotion of healing; (4) interruption of the cycle of secondary muscular splinting; (5) maintenance or reestablishment of normal mobility.

Protection of the Injured Area.—Adequate protection of an acutely injured back may be obtained in a number of ways. Severe pain with muscle spasm and limitation of back motion should be treated by putting the patient to bed in traction. The bed should have a ¾ in. bedboard extending under the entire mattress. The mattress should be firm and flat. Traction, preferably with a pelvic traction belt to which 16 to 20 lb. of weight is attached, provides comfortable immobilization and support of the lumbar spine. Buck's extension, with adhesive traction applied to the legs, is less comfortable than the belt. It interferes with turning or moving in bed. In some patients, a contact dermatitis develops under the tape. The traction on the extremities causes stiffness of the knees and hips. With either form of traction, the foot of the bed should be raised 4 to 6 in. to provide countertraction to the weight of the body. Traction supports or immobilizes the injured area of the back and thus makes muscular splinting unnecessary because the normal areas of the back can relax or contract and carry on limited movement without pain. Metabolites do not accumulate, and circulation is maintained. During the traction, healing *at the site of injury occurs more rapidly because of the* gentle immobilization without interference with circulation.

For less severe back injuries, adhesive taping can provide the necessary support during the initial period of healing. Tincture of benzoin should be put on the skin and allowed to dry prior to taping in order to decrease irritation. An overlapping layer of 2 in. tape is applied from the level of the buttock crease to the 10th thoracic spine. The tape extends to the lateral midline on each side. A diagonal cross is applied to give lateral stability, and then a second transverse layer is applied. A lumbosacral orthopedic belt may be used for back support. Such a support must fit snugly around the hips and restrict motion of the back well above the level of injury. The support of such a belt is less effective than either traction or taping. Its advantage is that it can be put on or removed as frequently as necessary and can be worn for a long period of time.

Relief of Pain.—The second aspect of treatment is to provide analgesia. Heat is an effective method of relieving pain due to injuries to muscles, joints, or connective tissue. Moderate heating of the injured area decreases its sensitivity to pain. Splinted muscles relax. With relaxation there is less tension on ligaments and tendons and less pressure on joints. Arterial circulation is increased. Intermittent muscular contraction promotes venous and lymphatic circulation. All of these factors promote healing at the site of injury. Injuries of the deeper layers of the muscles of the back or injuries to the spine or its ligaments respond better to diathermy than to more superficial heating. Short-wave diathermy from a pancake coil large enough to cover hips and back to the midthoracic level has been found to be the most effective type of heat. The area to which heat should be applied is more extensive than the area of injury because segmental referred pain and muscular splinting extend widely over the back. If persistent muscular splinting is prominent, Kenny-type hot packs are of value in obtaining relaxation of the muscles. The sudden application of the intensely hot pack followed by rapid cooling to a comfortable level probably acts as a counterirritant followed by a sedative effect that causes relaxation of the muscles. Radiant heating and conduction heating have not been found as effective as the types of heat described previously.

Massage is used routinely for back injuries because it produces a number of desired effects. The repeated gentle stroking or kneading of the soft tissues decreases the sensitivity to touch or motion, and the massaged muscles relax. Stroking and kneading increase the return of venous blood and decrease capillary congestion. Lymphatic flow is increased. The decrease of tissue fluid surrounding the cell increases the nutrition to the cell and promotes healing. Massage is begun gently and gradually increased in depth as the patient's tolerance increases. The deeper massage causes a passive motion of muscle fibers that helps to maintain their flexibility.

In cases of a localized injury or a trigger point, the infiltration of the area with 1% procaine hydrochloride solution relieves pain and interrupts the cycle of muscular splinting. This allows the patient to relax and move without discomfort for a matter of hours. In some cases in which such a trigger point has persisted for many weeks, repeated infiltration with procaine hydrochloride solution for several days permanently interrupted this cycle. The usefulness of such treatment is limited to cases in which there is a true trigger point.

Restoration of Normal Mobility.—Restriction of motion of the back for only a few days results in a progressive decrease in the range of motion of the back as rearrangement occurs in the distribution of connective tissue. Immobilization of any tissues results in restriction of their motion by collagen fibers deposited within and around them. If this connective tissue is allowed to develop into a fibrous contracture, permanent limitation of motion may occur. Once fibrous contractures have developed, it is difficult and often impossible to work them out by any subsequent exercises. To maintain mobility, the muscles of the back and hips should be stretched to their full resting length once or twice daily. Stretching exercises should be vigorous for all muscles except those in the injured area. Muscles most frequently splinted during backache, which should be stretched, are the erector spinae, and the extensors, flexors, and adductors of the hips. It is important, however, to prescribe the mobility exercises to meet the needs of each patient.

Occasionally after a twisting motion, the patient may experience a sudden stabbing pain over the sacrum with spasm of the back muscles and an inability to stand erect. Tenderness is localized definitely over one sacroiliac joint. There are no reflex changes. Straight leg raising is restricted, and Gaenslen's sign is elicited strongly. This is the acute sacroiliac strain that has been pushed into obscurity and even disrepute by the advent of the herniated intervertebral disk, but which nevertheless still occurs. Recognition of this condition as an entity is important because it can be relieved dramatically by manipulation if the patient is treated soon after the strain. Analgesia and relaxation are induced by heat, massage, and anodynes, if necessary. With the patient comfortably relaxed, the involved sacroiliac joint is manipulated with relatively little force. This provides immediate relief. Stretching of the hip and back extensors mobilizes the muscles held in spasm to protect the sacroiliac joint. If the sacroiliac strain has persisted unrelieved for more than a day or two, the accompanying muscle spasm will have caused soreness of the muscles that requires several days of treatment with short-wave diathermy and deep kneading massage to relieve.

SUMMARY

Injury to the deep muscles or connective tissue of the low back causes a protective muscular spasm that immobilizes the back and in itself produces pain in a number of ways. Effective treatment of injuries to the low back consists of support for the injured area while it heals, relief of pain, promotion of healing, and maintenance of mobility of the uninjured areas.

400 Union St., S. E. (14).

THERAPEUTIC NUTRITION WITH TUBE FEEDING

Morton D. Pareira, M.D., Emmett J. Conrad, M.D., Wilbur Hicks, M.D.
and
Robert Elman, M.D., St. Louis

That food is necessary for life is an ancient and well-known biological fact. Yet in clinical medicine this principle is too often inadequately applied, to the extent that starvation in the wards of modern hospitals is not uncommon even at a time when, beset by disease, the patient can least afford the consequences of deficits due to undernutrition. Though the gastrointestinal tract is intact and digestion unimpaired, it is obvious that the offering of an adequate diet is no guarantee of its acceptance. Indeed, because of anorexia or of mechanical impediments to chewing or swallowing, normal enteral alimentation is often the exception rather than the rule. The one obvious method for meeting this problem is the employment of satisfactory tube feeding.

PREVIOUS WORK

"Forced feeding" of some undescribed type is known to have been practiced in Greco-Roman times.[1] In 1617, Aquapendente [2] wrote on the subject of tubal alimentation and pictured a nasogastric tube. John Hunter [3] reintroduced this method of feeding in the last half of the 18th century. That the procedure did not gain standard acceptance in his country is evidenced by the appearance of a short note in *Lancet* one century later describing the use of a "stomach pump" for feeding in a single case.[4] Mention of tube feeding appeared in the American literature in 1879.[5] As substitutes, when necessary, for rectal feeding are mentioned the use of a bilumen esophageal tube (so that gas can escape through one while food goes into the other) or the injection, by syringe, of nutrient liquids into a nostril ("Time should be given between each syringeful for the patient to swallow and breathe.") In 1882, Rankin [6] described three patients in whom he used nasogastric tube feeding. The tube was passed at the time of each feeding "with the aid of four

---

From the Surgical Metabolism Division, Homer G. Phillips Hospital, and the Department of Surgery, Washington University School of Medicine.

Because of space limitations, the bibliographic references have been omitted from THE JOURNAL and will appear in the authors' reprints.

This study was supported by Cancer Control Grant no. CS-9108 of the United States Public Health Service.

The material was presented as a scientific exhibit at the 39th Clinical Congress of the American College of Surgeons, Chicago, Oct. 5-9, 1953.

stout men," then immediately withdrawn. In 1916, Jones[7] reported satisfactory experiences with continuous drip feeding of peptic ulcer patients with the Einhorn duodenal tube.

Tube feeding has more recently been subject to condemnation, e. g., "Feeding by a stomach tube is not a satisfactory procedure,"[8] and prolonged feeding of a patient by intubation "presents a most difficult and trying problem both from a nutritional and psychologic point of view."[9] On the other hand, Ransome[10] described tube feeding in tropical practice as a lifesaving measure in hundreds of cases of malaria and meningitis. In 19 cases in which postmortem examinations were done, none showed evidence of aspiration such as bronchopneumonia. One of us (R E.) described a case in which as much as 8,000 calories including 500 gm. of protein was given each day as a tube feeding for several days in preparation for gastrectomy.[11]

TABLE 1—*Duration of Tube Feeding*

Type of Patient	No of Patients	No Days per Patient (Average)	Total Days
Metabolic study			
2-7 days	23	5	103
1-4 weeks	47	18	840
1-9 months	32*	88	2,832
Therapy only			
2-7 days	19	4	87
1-4 weeks	88	20	1,705
1-3 months	11	53	585
Outpatients			
1-4 weeks	8	31	250
1-3 months	12	48	572
Total	240		6,974

* Twelve patients were fed by tube for three to nine months

When used, many dietary formulas have been advocated for tube feeding. These have ranged from homogenized solid food substances[12] through combinations of simple dairy products with basic supplements[13] to solutions of elementary food substances in sterile, sealed delivery flasks After extensive study, the present authors found that none of these diets fulfilled the criteria finally adopted. We are reporting our experiences with a new tube feeding mixture that has proved entirely successful.

METHODS

A total of 240 patients were fed solely by tube (table 1). Twenty patients fed themselves as outpatients, and the rest were hospitalized. The total represents nearly 7,000 tube feeding days. Only 42 of the 240 were fed for less than one week; most were fed for between 1 and 16 weeks, and 12 patients were tube-fed for from three to nine months. In addition, the same tube feeding mixture was used without the tube as a beverage for 76 additional patients; 17 drank the mixture for less than one week, 45 for from one to two weeks, and 14 for from two to four weeks.

Selection of Subjects.—The great majority of the patients in this study fall into one of the following categories, which can also be listed as indications for tube feeding.

1. Primary malnutrition without organic cause, e. g., anorexia nervosa.

2. Anorexia resulting from the effects of active, acute. or chronic diseases of many types including trauma. burns, various intra-abdominal diseases. cerebrovascular accidents, advanced cancer, and tuberculosis.

3. Postconvalescence malnutrition that persisted because of anorexia. These were patients in whom the precipitating cause of the malnutrition had been removed but in whom the malnutrition itself induced anorexia and thus perpetuated itself and precluded spontaneous nutritional rehabilitation. About one-third of the patients were in this group.

4. Patients with mechanical impediments to eating and swallowing due to (*a*) maxillofacial surgery. (*b*) interdental wiring, (*c*) lesions of the pharynx and esophagus, and (*d*) paralysis of swallowing muscles. Patients of types *a* and *b* were given one of three feeding programs: (1) a preliminary period (followed by weight loss and asthenia) of the usual routine consisting of nutritive liquids as ordinarily obtainable from the grocery store. after which tube feeding was started; (2) tube feeding used from the outset; and (3) drinking from the outset of the same full 24 hour ration as was used in tube feeding.

5. Patients unable to eat because of sensorial depression, i. e., those semiconscious or unconscious from varying causes.

6. Preoperative malnutrition in the surgical patients in whom rapid, partial, or complete nutritional rehabilitation was undertaken.

7. Postoperative malnutrition in patients in whom preoperative malnutrition was either not corrected or was uncorrectable.

8. Patients suffering from terminal cancer, i. e., advanced spread and complete or partial invalidism The 64 patients in this group are classified in table 2.

TABLE 2—*Nasogastric Tube Feeding in Patients with Advanced Cancer*

Site of Cancer	No of Patients	Days of Tube Feeding	
		Range	Average
Cervix	26	6-49	18
Large intestine	10	4 25	15
Stomach	6	12 27	18
Oropharynx	6	5-50	26
Tongue	4	14 25	22
Pancreas	3	9-49	27
Breast	3	4 21	14
Other	6	6-63	25
Total	64	4-63	20

9 Undernourished patients who could eat normally but in whom more rapid rehabilitation was undertaken by hyperalimentation.

Observations Made.—Patients were weighed initially and every three to seven days thereafter. The number and consistency of stools were recorded daily. The duration of anorexia and asthenia, if present. and the time of their disappearance were recorded. Metabolic data. including nitrogen and water balance and blood chemical changes, were obtained in 25% of the total number of patients treated and will be reported later.

Intubation.—A polyvinyl tube of 2.5 mm. external diameter (no. 13 clear transflex), now in use for three years, is softer and more flexible than polyethylene. For intermittent feeding the aliquot was injected into the tube by use of a 50 ml. syringe through a no. 15 gauge hollow needle, the shaft of which fits snugly into the lumen of the tube. For continuous drip the hub of the no. 15 gauge needle was connected to an adapter at the distal end of an ordinary rubber tube leading from an open type (Salvarsan) flask. The usual glass drip meter was interposed in this connecting tube so that drops could be seen and the rate of flow regulated by a pinch clamp. The end of the tube introduced into the stomach was open and required no special preparation. The same tube has been left in place up to four months without clogging or producing irritation. However, the rubber connections and glass drip and container must be cleaned or replaced every 24 hours.

TABLE 3.—*Analysis of the Tube Feeding Mixture**

	%	Amount	Calories
Protein	23.5	210.0 gm.†	840
Carbohydrate	66.5	600.0 gm.	2,400
Fat	3.5	30.0 gm.	270
Minerals (ash)	2.5	....	...
Calcium	0.7	6.3 gm.	...
Phosphorus	0.5	4.5 gm.	...
Potassium	0.7	6.3 gm.	...
Sodium	0.2	1.8 gm.	...
Chlorine	0.5	4.5 gm.	...
Sulfur	0.3	2.7 gm.	...
Magnesium	0.06	0.5 gm.	...
Iron (added)	0.003	0.27 gm.	...
Choline bitartrate	....	0.5 gm.	...
Vitamins			
Thiamine	....	10.0 mg.	...
Riboflavin	....	10.0 mg.	...
Ascorbic acid	....	300.0 mg.	...
Nicotinamide (niacinamide)	....	100.0 mg.	...
Calcium pantothenate	.. .	40.0 mg.	...
Pyridoxine hydrochloride	....	5.0 mg.	...
Folic acid	....	2.5 mg.	...
Cyanocobalamin (B_{12})	....	4.0 mg.	...
Moisture	2.5	....	...
Total	....	900 gm.	3,510

* The mixture was made up and furnished through the cooperation of Dr. Warren M. Cox Jr., Mead Johnson & Company, Evansville, Ind.

† Nitrogen = 33.6 gm.

Intubation was done as with any other nasogastric tube except that a little more time was usually necessary. The tube, being so light-bodied, could not be aided in its passage by pushing. Chilling the tube tends to temporarily increase its rigidity; however, the tube was satisfactorily passed into the stomach in semicomatose and comatose patients as long as the swallowing reflex was present.

Composition of the Diet.—The tube feeding mixture was made up by suspending in water a dry mixture consisting of powdered whole milk, nonfat milk solids, calcium caseinate, dextrose, a preparation of dextrin and maltose (Dextri-Maltose), vitamins, iron, and choline (table 3). Nine hundred grams of the mixture contains 3,500 calories, 210 gm. of protein (33.6 gm. of nitrogen), and vitamins and minerals in amounts recommended as therapeutic by the Committee on Therapeutic Nutrition of the National Research Council.

Amount Given.—For the standard daily ration, 900 gm. were used. For tubal feeding by continuous drip, the 900 gm. were suspended in 1.8 to 2.4 liters of water. A more concentrated suspension was used for tube feeding by intermittent instillation or oral ingestion, i. e., 900 gm. in about 1.5 liters of water. All patients were allowed to drink water at will, and all of them did. However, in semiconscious and comatose patients, added water may have to be given to preclude the danger of nitrogen retention, especially when renal concentrating function is impaired, when there is an unusually large tissue protein breakdown, and when the needs for water are increased. In our early studies we occasionally observed pronounced azotemia with a high protein intake in such patients whenever adequate water was not given.

The first 48 hours of feeding were ordinarily on one-half ration; when feeding was by continuous drip the one-half ration was distributed over the 24 hours. The most severely malnourished patients were fed one one-third ration for two days, one-half ration for the next two days, and then full ration. If any tendency toward upper abdominal fulness or soft stools appeared, the feeding was reduced to one-half ration for another two days before full feeding was resumed.

Method of Preparation.—The powder was suspended by the use of a Waring Blendor or an ordinary egg beater or by hand with a spoon. Each method was satisfactory. When the suspension was used for continuous drip administration, we were careful to ascertain that no lumps remained after stirring. When the powder was suspended by use of the Waring Blendor, it was necessary to wait a few hours to allow air bubbles to escape before using. In storing and handling the powder and in preparing the suspension, only the ordinary sanitary precautions as practiced in the home kitchen have been observed. No more than a 24 hour ration was suspended at one time, and once suspended, the liquid was stored in a refrigerator but was shaken thoroughly before portions were removed. For continuous drip no more than 300 ml. was placed in the drip flask at one time. Outpatients were furnished three to seven days' rations in powder form and instructed in the method of suspension. Many patients were able to continue their work by carrying the midday aliquot with them in a thermos container.

Three methods of feeding were used: (1) continuous 24 hour drip, (2) intermittent administration in from four to six aliquots per 24 hours, and (3) a combination of the two methods. These were not used in patients who were able to drink the 24 hour ration yet who were unable to eat solid food. The initial feeding of all anoretic and malnourished patients was done with the continuous drip method; intermittent feeding was substituted after one to three weeks. The longer periods of continuous feeding were observed in the more severely malnourished patients. Tubal alimentation was discontinued when a mechanical impediment to eating disappeared, when acute illness subsided and the patient recovered his appetite, when anorexia disappeared, or when surgery was undertaken in preoperatively malnourished patients.

Time Factor.—The relation of the time factor in feeding to nitrogen balance and rate of weight gain was studied in 10 patients. The same total feeding was given over a 30 day period, but in the first and last 10 day periods continuous (24 hour) drip feeding was used, while in the middle 10 day period various types of intermittent feeding were used. Thus three patients were fed every 4 hours during the 24 hours (six fractions), two were fed every 6 hours during the 24 hours (four fractions), three patients were fed every 3 hours during 12 of the 24 hours (four fractions), and two patients were fed the full ration by continuous drip in 14 of each 24 hours.

FINDINGS

Tolerance.—Gastrointestinal tolerance to the feeding mixture used was remarkably good. Of 316 patients receiving the mixture as their sole intake (240 by tube and 76 orally) some degree of diarrhea developed in 22 (7 %). In 16 of these 22 patients, the diarrhea was mild and abated almost immediately after slowing the rate of feeding. In 6 of the 22 patients the diarrhea was severe and continued at all feeding levels above 1,000 calories per 24 hours. Thus, in 5% of the patients in the series there appeared mild diarrhea that was abolished by slowing the rate of feeding, while in 2% of the patients (6 out of 316) diarrhea appeared that was sufficiently persistent and severe to necessitate the discontinuance of feeding

There were no instances of aspiration pneumonia or esophageal ulceration in the series. No tube became occluded during the feeding periods, some of which were prolonged (table 1). Psychological acceptance was very good; no patient gave a specific physical complaint in respect to the indwelling tube. Patients fed by continuous drip did not complain of excess fulness, while patients fed intermittently experienced normal satiety. When used as a drink the mixture was quite acceptable in respect to taste.

General Response of the Malnourished Patient.—None of the patients studied failed to show a positive nitrogen balance after the institution of tube feeding. All the patients except a few who were in the terminal state of disease showed a significant weight increase (table 4). In some of the most severely malnourished patients there was a transient weight loss in the presence of a positive nitrogen balance before weight gain was established, probably caused by loss of overt or latent edema. Practically all malnourished patients fed two weeks or more showed an increase in concentration of hemoglobin and serum albumin, the former increasing at a more rapid rate as expected. The increase in these concentrations was frequently preceded by a decrease that undoubtedly represented hemodilution (cases 1 and 2 below). The details of the metabolic studies will be reported separately.

Case 1.—A 64-year-old man had become asthenic and anoretic and had finally become bedfast several months after successful surgical correction of intestinal obstruction. He had lost 18 kg. in weight. After he was fed by tube, he gained weight steadily, and a consistent positive nitrogen balance was noted (fig. 1). The concentration of serum albumin and the hematocrit reading also increased without blood transfusions. He was fed the standard ration by tube for 30 days.

Case 2.—A 2-year-old child with a head injury had refused to eat and had had a fall in body weight. The child became critically ill despite the use of parenteral injections. The patient's condition improved when tube feeding was instituted at the beginning of the third hospital week (fig. 2). Within one week the general condition was so much improved that a subdural hematoma was successfully evacuated. Continued improvement and weight gain followed. Two weeks later the tube was removed. The child ate well and was discharged from the hospital one week later.

Case 3.—A 25-year-old man whose fractured jaw had been wired four weeks previously had lost 5 kg. in weight and had been quite weak and unable to work. He improved rapidly after tube feeding was instituted (fig. 3).

Correction of Anorexia.—Appetite returned in nearly all patients after one to four weeks of tube feeding; the time was roughly proportional to the degree and duration of the malnutrition (table 4). As appetite returned, many patients requested permission to "eat around the tube" and, given the opportunity, did so in addition to an intake by tube of 3,500 calories. After return of appetite and removal of the tube, the spontaneous caloric intake was calculated from the trays of several patients and found to remain high.

Table 4.—*Relief of Anorexia During Nutritional Rehabilitation in Cancerous and Noncancerous Cachexia*

Case	Age	Cancer	% Body Weight Loss	Duration of Anorexia, Days	Return of Appetite, Days	Nitrogen Retained, Gm	Weight Gain, Kg.
1	71	—	35	280	21	204.2	2.2
2	37	+	8	28	7	139.4	2.4
3	68	—	25	42	9	192.8	1.1
4	39	—	31	140	9	124.6	2.9
5	52	—	26	140	9	226.5	2.7
6	70	—	59	280	37	700.2	3.6
7	46	+	21	35	19	379.1	3.4
8	59	—	34	140	15	376.9	3.0
9	47	—	34	196	7	104.9	0.3
10	47	+	31	56	21	247.3	2.8
11	38	—	34	84	21	295.3	0
12	27	—	19	84	12	145.9	0.7
13	41	—	27	56	9	200.8	2.9
14	25	—	Not known	311	56	700.0	Not known
15	64	—	32	Not known	18	308.0	5.1
16	46	—	Not known	175	15	273.5	Not known
17	51	—	25	196	15	197.9	4.0
18	32	—	33	56	8	167.8	2.5

Physical Rehabilitation.—A number of patients were bedfast because of malnutrition, and practically all of them became ambulatory within one to three weeks after onset of tubal alimentation. This point was often reached before appetite had returned. A number of patients were able to return to their homes after a few weeks of tubal alimentation and there help care for themselves. There is reason to believe that these patients would otherwise have remained institutional wards until their death.

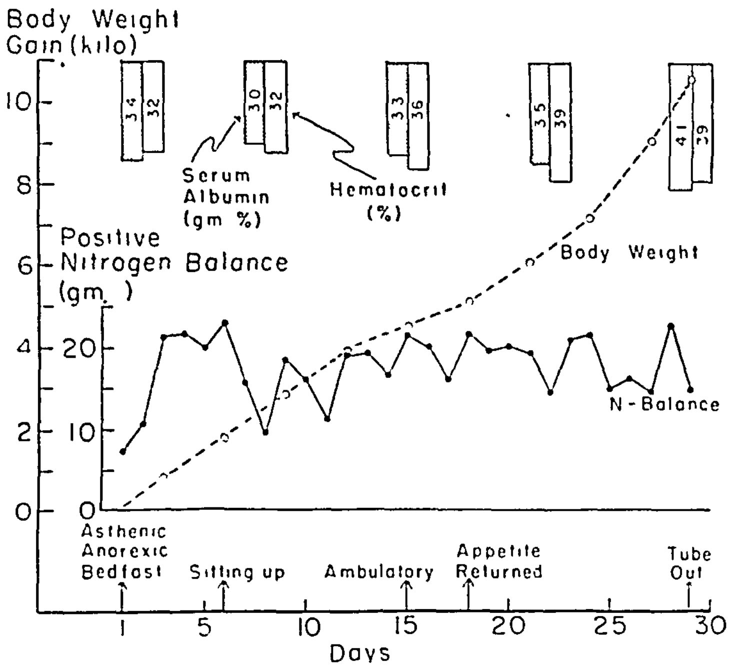


Fig. 1.—Response to tube feeding in postoperative anorexia in patient reported on in case 1.

There were patients in our series for whom needed surgery was withheld because of severe malnutrition. Parenteral alimentation was not indicated because their gastrointestinal tract was normal. Reasonably short intervals of tubal alimentation so improved the nutritional status of these patients that surgery could be performed with a much more reasonable risk, as in case 2.

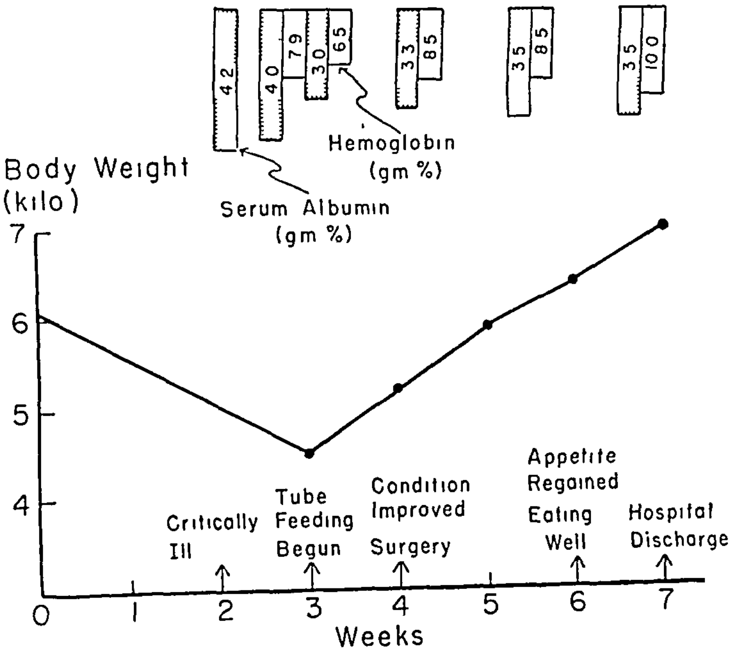


Fig. 2.—Weight and blood changes before and after tube feeding in patient reported on in case 2.

Time Factor.—In table 5 it may be seen that there is no significant difference in nitrogen balance during intermittent feeding periods as compared with the preceding and following control periods, during which the equivalent 24 hour ration was fed by continuous drip. In all of the patients studied the weight gain curve was unchanged during the intermittent feeding period.

Patients with Maxillofacial Injuries.—Eight patients who had had interdental wiring for fractured jaws 5 to 30 days previously were picked at random from the outpatient department. All had been given "routine" instructions in the use of liquid food. All had lost from 1.8 to 6.8 kg. in body weight. None had been able to return to his usual occupation because of progressive asthenia. These patients were then intubated and instructed in the preparation of the feeding mixture and its use. All gained weight and strength, and all returned to gainful activity before removal of the wires after tube feeding had been used for 4 to 21 days; the usual time was 7 days. A typical example is shown in figure 3.

Tube feeding was then used on five patients requiring interdental wiring from the onset of fixation until the wires were removed. None lost strength or appetite and, indeed, all gained weight in spite of an essentially normal nutritional status at the onset of feeding. All were able to return to their normal activities almost at once. The usual 24 hour tube feeding mixture was then given to six other patients orally from onset of fixation. The response was similar in all but one patient who, possibly because of concealed failure to drink the mixture, lost weight and strength and was unable to return to work. This patient was then fed by tube and after one week returned to work. From this point to the removal of wires (a three week period) the patient took the entire ration and his nutrition was maintained.

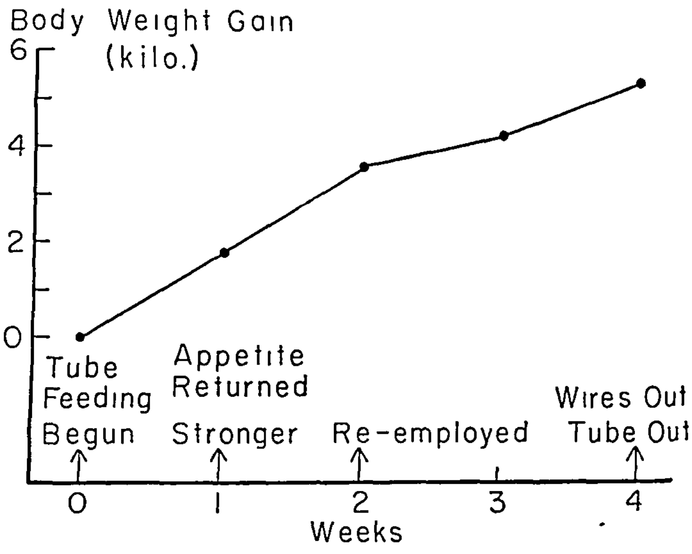


Fig. 3.—Weight gain in response to tube feeding in patient reported on in case 3.

Patients with Advanced Cancer.—All of the 64 patients with advanced cancer who lived for more than a week after starting tube feeding gained weight and strength (table 2). None in the metabolic study group failed to show a positive nitrogen balance. The majority became definitely less of a nursing problem, and quite a few who were bedfast became ambulatory. Ten of the completely bedfast patients returned to their homes, where they remained ambulatory and able to care for themselves almost until their deaths, which occurred from two to six months later. Most of the patients with advanced cancer were found to require less narcosis after one to two weeks of tubal alimentation. The metabolic response to hyperalimentation of these patients was different in some respects from that of malnourished patients without cancer and will be described in another report. Though difficult to measure, there was no evidence that tube feeding lengthened the expected duration of life. Patients in whom the tumor could be palpated were carefully examined, and it seems as if the tumor did grow at an equal pace with the body weight gain and nitrogen retention.

COMMENT

The necessity for nutritional repletion of the severely malnourished patient is obvious. Even with deficiencies of lesser degree in patients afflicted by disease, in need of major surgery, convalescing from illness or surgery, or mechanically unable to eat,[14] the need for an adequate food intake is equally important. Unfortunately, anorexia as well as the mechanical impediments often preclude spontaneous ingestion of a normal diet by these patients. Alimentation must then be accomplished by special therapeutic devices. Too often attempts to use relatively simple methods, including specially prepared and appetizing dishes, good nursing care, persuasion by the physician, and fortified liquid drinks, fail. Under such conditions, when the alimentary tract is able to digest and assimilate, adequate tube feeding remains as an effective means of insuring the needed food intake.

The tube feeding mixture and method described here with the use of a small polyvinyl tube has proved effective and completely practical in over 320 patients. Evidence of gastrointestinal irritation of any degree was observed in less than 7% of the cases, and in only 2% was the disturbance severe enough to call for discontinuance of the tube feeding. Moreover, no clinical evidence of aspiration was observed, and, of the patients on whom autopsy was done (most of them with advanced cancer), none showed evidence of aspiration into the lungs.

The remarkably low incidence of gastrointestinal disturbances found in the present experience is noteworthy in view of the frequency of disturbances as reported by other observers and our own experiences with other preparations in the past. Although no specific study was made of the many factors involved in the production of diarrhea, a number of significant details might be mentioned. A most important influence was encountered early in our studies, i. e., the need for meticulous cleanliness of the container and all other glassware used. This precaution minimized contamination with putrefactive bacteria, which can readily induce gastroenteritis. The relatively low fat content (30 gm.) in the present mixture was, we felt, of significance in reducing the incidence of diarrhea, although it must be mentioned that evidence has been reported by others [13] that a higher fat content is preferable. This inference was based on a comparison of two tube feeding mixtures, each of 2.100 calories. The one containing 103 gm. of fat was followed by a 10% incidence of diarrhea, the one containing 34 gm., 38%. That the preparation described herein was a dry powder and the protein component insoluble and therefore in suspension may also have been a factor in minimizing gastrointestinal disturbance. An important detail already mentioned was the tendency for diarrhea to develop in severely malnourished patients on the full ration but not in patients fed a one-half or a one-third ration, particularly when the ration was given by slow drip throughout the 24 hour period. Finally, fecal impaction is a complication that is sometimes associated with the production of diarrhea. It seems clear that these and other factors need further study before definite conclusions can be drawn as to the cause of these disturbances with tube feeding. In any case, the present observations indicate that such difficulties can be almost completely eliminated under the conditions described herein.

The composition of the 24 hour ration used in the present study is complete as based on recommendations of the Committee on Therapeutic Nutrition of the National Research Council.[14b] It contained 210 gm. of protein, which is 24% of the 3,500 total calories; this is double the percentage for whole cow's milk. It also contained all needed minerals and vitamins without being excessively high in salt (table 1). Whether feeding at higher caloric or protein levels would significantly enhance repletion must remain for further study. That repletion is retarded at lower levels of caloric and protein feeding is indicated by the investigations of Keys and others.[14a]

Despite the demonstration by Geiger [15] that the nutritional value of various nitrogen-containing foodstuffs partly increases with increased gastric emptying time and

TABLE 5.—*Results of the Time Factor Experiments*

Timing of Intermittent Feedings During Period 2	Patient	Average Daily Calorie Intake	Average Daily Nitrogen Intake, Gm	Average Daily Nitrogen Balance (Gm.) During Consecutive 10 Day Periods: Period 1 (Continuous 24 Hr. Drip)	Period 2 (Intermittent Feeding)	Period 3 (Continuous 24 Hr. Drip)
Every 4 hr during 24 hr (6 fractions)	A	3,500	33 6	+21.8	−23 0	+21.9
	B	3,140	30 2	− 9 9	−11.2	−11.5
	C	3,290	31 7	−17 8	−13 6	+12 0
Every 6 hr during 24 hr (4 fractions)	D	4,500	43 2	−29 7	−29 9	−29 6
	E	3,500	33 6	−19 2	−20.5	+20.5
Every 3 hr during 12 hr. (4 fractions) .	F	3,500	33 6	+21.8	+24 7	+23 1
	G	3,500	33 6	+22.3	−21 7	+22 4
	H	3,500	33 6	+22.8	−22 0	+24.7
Continuous drip during 14 hr of each 24 hr	I	3,500	33 6	+17 7	+16 2	+19.8
	J	3,500	33 6	−17 9	−19 9	−18.3

despite the assumption of Elliott and his associates [16] that tubal alimentation is more effective by continuous drip, our studies of this time factor with the present mixture were negative. Thus we found that feeding the 24 hour ration in equal aliquots every 4 hours or every 6 hours throughout the 24 hours, every 3 hours during 12 of the 24 hours, or by continuous drip during 14 of each 24 hours leads to equally efficient nitrogen retention and weight gain, as does feeding by continuous 24 hour drip at this particular level of feeding. Whether the same results would follow a larger intake of, for example, 5,000 or 6,000 calories per day must remain for further study. Nevertheless, the present observations are of clinical importance in that intermittent feeding is considerably more convenient than continuous tube feeding and, indeed, allows the patient to be out of bed readily. On the other hand, as already mentioned, a continuous drip feeding is necessary as the initial procedure in the severely malnourished patient in order to minimize the likelihood of gastrointestinal disturbances.

The economic advantage of tube feeding was apparent in this study in shortening the period of illness and of preparing undernourished patients for surgery. Prolonged convalescence, which is so often due to malnutrition, delays return to gainful activities. Short periods of tubal alimentation can spare weeks, sometimes months, of occupational loss. This was strikingly shown in the present study of patients with jaws wired after fracture (fig. 3).

That malnutrition alone may beget anorexia and thus create a vicious circle has been strikingly shown in our studies. The decisive importance of this obvious fact was known decades ago, as expressed by Chossat [17] who said, "Inanition is the cause of death which marches abreast of and in silence with every malady in which alimentation is not in a normal state; it reaches its term sometimes sooner, sometimes later, than the disease it accompanies, and may become a principal disease where at first it had only been an epiphenomenon." The most common causes of malnutrition in the present study were chronic disease, trauma, and surgery. Patients whose disease is conquered or whose surgery is completed but who remain undernourished "eat their way back" slowly or not at all. On the other hand, when tube feeding was employed, the return of appetite was striking and this return broke into the vicious circle and led to rapid nutritional restoration. Indeed, earlier use of tube feeding would have prevented malnutrition.

The advanced cancer patients we studied were undernourished not because of the cancer per se but because of starvation that in turn followed anorexia. The downward progress of malnutrition in such patients can be reversed and appetite restored by appropriate tube feeding just as it can be in cachexia due to cancer. Patients with advanced cancer were able to retain and utilize protein almost as well as equally malnourished patients without cancer. While successful nutritional therapy of these patients did not measurably alter the eventual outcome, it did increase comfort and strength and enhance activity, benefits that were very helpful to the patient, the family, and the personnel involved in terminal care.

The relatively high protein intake in the ration used was designed to shorten the period of nutritional rehabilitation as much as possible, since most of the patients studied were severely depleted. For ordinary maintenance 50 to 70 gm. of protein a day is adequate rather than the 210 gm. used here. It should be emphasized, moreover, that the higher the protein intake the greater the water requirement. In the present study, an oral intake of water at the wish of the patient by satisfying the sense of thirst met the water needs, since all patients were conscious and rational. As shown by Dr. F. L. Engel [18] and others, high protein intakes may lead to disturbing and even fatal azotemia and hypernatremia in semiconscious or unconscious patients unable to take sufficient water. In such cases sufficient water will have to be supplied if a high protein intake is desired.

SUMMARY

A practical method of tube feeding for purposes of therapeutic nutrition has been successfully used in over 320 malnourished patients; the method has been used for nearly 7,000 tube feeding days. The maximum daily intake used in this study contained 3,500 calories, 210 gm. of protein, 30 gm. of fat, and a mixture of minerals and vitamins, based on the recommendations of the Committee of Therapeutic Nutrition of the Food and Nutrition Board. The sodium content was 1.8 gm. Water was taken at will.

Few significant complications were encountered. In only 7% of all patients did some degree of gastrointestinal disturbance develop, and in only 2% was it necessary to discontinue the feeding for this or any reason. No evidence of aspiration was seen.

In patients with severe anorexia, return of appetite was uniformly observed; in 16 of 18 carefully studied cases this occurred within 21 days of the onset of tube feeding. Nutritional rehabilitation was shown by weight gain, positive nitrogen balance, and increases in hemoglobin and plasma protein concentration without transfusions. No difference in nitrogen balance was observed when the 3,500 calorie tube feeding was given intermittently as compared with a 24 hour continuous drip.

4960 Audobon Ave. (10) (Dr. Elman).

When Not to Use ACTH or Cortisone.—These powerful hormones should not be lightly prescribed. Serious untoward reactions (chiefly pharmacologic) can occur, especially those associated with edema, increased blood pressure, increased glycosuria, and reactivation of latent pulmonary tuberculosis and peptic ulcers. Psychosis and suicide have followed their use, and infections have been masked, to be discovered later at autopsy. In allergic conditions, then, ACTH and cortisone should not be thought of first when a new patient walks in the door. Instead, that patient should be given a full allergy survey and time-tested allergic treatment. These include a very careful history and physical examination, along with complete (not partial) skin tests (both scratch and intradermal), and laboratory and x-ray studies. All this is followed by a discussion and explanation of findings with the patient; the allergy treatment is outlined and started. Allergens are to be avoided, and hyposensitization is started when indicated. These processes take some time, and in most patients the results are good or at least satisfactory. In those patients in whom such a careful allergy régime is unsuccessful, ACTH and cortisone are to be tried. . . . —L. Unger, M.D., and A. Unger, M.D., Use and Abuse of Corticotropin (ACTH) and Cortisone in Allergic Conditions, *Annals of Internal Medicine*, April, 1954.

PSYCHIATRIC SELECTION FOR MILITARY SERVICE

Capt. George N. Raines (MC), U.S.N., Commander Cecil L. Wittson (MC), U.S.N.R.
Commander William A. Hunt (MSC), U.S.N.R.
and
Lieut. Commander Robert S. Herrmann (MSC), U.S.N.

The neuropsychiatric selection program at all United States Naval training centers was inaugurated by a letter of the Surgeon General, Jan. 2, 1941, addressed to the senior medical officer at each training center. It established a "procedure to eliminate the neuropsychiatric unfit" and was accompanied by an enclosure entitled "Outline of a Procedure for the Determination of the Neuropsychiatric Unfit." This letter, with its enclosure, defined the objectives and philosophy of the neuropsychiatric selection program, outlined roughly the form t was to take, and defined the duties of the psychiatrist n its execution. It established a neuropsychiatric examnation as an integral part of the initial medical examinaion for all recruits undergoing training and provided for he subsequent psychiatric evaluation of such recruits as might later be referred to the psychiatrist because of difficulty in adjusting to the demands of the training period.

Neuropsychiatric selection was envisaged as both positive and negative, since its purpose was not only to eliminate the frankly unfit from the service but also to aid in selective placement within the service in order that borderline recruits would not be placed under service conditions in which they were likely to break down. This anticipated the current stress on "screening-in" as well as "screening-out."

The selection program originally was conceived as being flexible in order to meet special conditions that might arise, and flexibility also was permitted in the choice of those specific psychiatric examination techniques to be used. The need for participation of some type of administrative board in determining the elimination of recruits from the service was recognized, as well as the necessity for indoctrination lectures for cooperating personnel and departments if the program was to function effectively. The original letter also designated clinical psychologists as part of the personnel of the psychiatric unit. The part to be played by the clinical psychologist was further defined by the Surgeon General's letter of Feb. 1, 1941, which dealt with the use of psychologists and included an outline of procedure. The duties of the psychologist were defined as the evaluation of abilities and temperamental traits. It was recognized that in such evaluation the psychologist not only would employ standard objective techniques such as psychological tests but also would make his evaluation in the light of the recruit's personal reactions, his history, and his attitudes. It was suggested that group tests might be used to facilitate the psychiatric examination if necessary. Specific attention was given to the need for a constant gathering and processing of research data for the continued improvement of the examination techniques.

Within this general framework, subsequent directives have altered the specific details of the selection program from time to time, reflecting changing manpower and administrative demands as well as growing professional knowledge. As the value of neuropsychiatric selection to the general training program has become increasingly clear with time, the duties of the training station psychiatric unit have expanded. It may assist in the selection of men for literacy training, may be called on to examine recruits who have become disciplinary problems, and may be assigned many other selection and social psychiatric responsibilities by the local command and the bureau as the occasion arises. The authority for the current program is contained in the letter of April 27, 1953.

KEY PROCEDURES OF THE SELECTION PROGRAM

The neuropsychiatric selection program rests solidly on certain key procedures: the screening examination, the psychiatric ward, trial duty, the aptitude board, ancillary mental hygiene duties, and the constant improvement of techniques.

Original Screening Examination.—Every recruit receives a psychiatric examination on his arrival at a training center. The core of this examination is the brief psychiatric interview. This examination is given shortly after the recruit's arrival and before he is assigned to a recruit training company in order to identify as soon as possible both the unfit and the marginal recruit. Such early identification assures the rapid separation from the service of the obviously unfit recruit as a protection to both the service and the man himself. The immediate spotting of the marginal man whose adjustment to the service is doubtful is equally vital, since it not only makes it possible to keep a watchful eye on his subsequent development during training but guarantees the immediate application where necessary of the full mental hygiene resources of the psychiatric unit in assisting him to adjust to the service.

The Psychiatric Ward.—Men who seem in need of further, more intensive study are referred to the psychiatric observation ward, where a careful psychiatric, psychological, and medical case study is made. This study makes possible a detailed check on the psychiatric judgments passed during the interview. It insures that separation from the service will be made not on the sole basis of the brief examination but only after an exhaustive study on the observation ward has clearly verified a recruit's unsuitability.

Trial Duty.—If, as a result of either the original examination or later, more careful study on the ward, the recruit's ability to adjust remains in doubt, he can be

---

This study derives in part from a project subsidized by the Office of Naval Research under contract with Northwestern University. The opinions expressed are those of the individual authors and do not represent the opinions or policy of the Naval service.

sent to trial duty in a recruit company. Here he can be observed under actual service conditions during training. This trial duty provides a "work sample" of the recruit's adaptive potential for the service. By thus giving the marginal man a fair opportunity to demonstrate his ability to adjust in a recruit company it is possible to make sure that his discharge, if finally necessary, results not merely from the application of arbitrary psychiatric criteria but from further behavioral criteria obtained from his performance in the training situation.

The Aptitude Board.—When the psychiatric unit decides that a man should be separated from the service, its recommendation is reviewed by an aptitude board. Provision is made for line officers as well as medical personnel on this board, for it is desirable to obtain the operational point of view and the reinforcement of psychiatric opinion by the judgment of those who would be responsible for the man under actual service conditions.

Ancillary Mental Hygiene Duties.—Of vital importance to "screening-in" or fitting the marginal man to the service are the many ancillary mental hygiene duties assigned to the psychiatric unit for the purpose of assisting the doubtful recruit in adjusting to the service. These include outpatient therapy, consultation with the classification department in selective placement of problem patients, cooperation with literacy training programs, psychiatric orientation lectures to company commanders of recruit training companies, educational lectures for other cooperating personnel, consultative service in disciplinary cases, and such other special mental hygiene functions as the senior medical officer or the commanding officer may designate.

TABLE 1.—*Psychiatric Discharge Rate During Training and Subsequent Psychiatric Attrition During Service*

Training Center	No. of Recruits Screened	% Discharged During Training	% Discharged Subsequently
	April, 1943		
Great Lakes	1,525	4.5	1.5
Newport	1,173	2.6	1.8
Sampson	2,823	0.7	3.0
	June, 1943		
Great Lakes	1,317	5.9	3.2
Newport	1,294	4.2	3.0
Sampson	1,281	0.7	3.7
	July, 1943		
Great Lakes	1,350	5.2	3.3
Newport	1,310	3.0	3.6
Sampson	1,354	1.3	5.0

Improvement of Present Techniques.—The constantly changing needs and requirements of the Naval service demand continual changes and improvements in selection procedures. It is to meet these ever-changing needs and the new problems they present, and to insure the application to them of the best and latest psychiatric knowledge, that the psychiatric unit is assigned a definite research function as an important part of its responsibility. This research function must be reviewed as a continuing responsibility whose practical contribution will be improved selection techniques and ultimate improvement in the combat efficiency of the service.

EVALUATION OF THE SCREENING PROGRAM

The original selection program begun in 1941 was instituted on an a priori basis without any preliminary experimental investigation of its assumed efficacy, and the operational pressures of World War II precluded any detailed experimental check; by the end of the war the desirability of a sound, objective evaluation of the program was obvious. On the cessation of hostilities a coordinated program of research on the efficiency of the neuropsychiatric selection program was begun by the neuropsychiatric branch of the professional division of the Bureau of Medicine and Surgery with the cooperation of the Office of Naval Research. These studies have demonstrated the basic validity of the program and have shown the possibility of putting neuropsychiatric selection on a sound scientific basis.

The first question to be answered concerned the basic validity of the program of neuropsychiatric screening instituted at Naval training centers during World War II. Was screening successful in reducing the amount of subsequent psychiatric attrition during service among the groups that were screened? The period selected for study was the spring of 1943.[1] At this time the quality of th recruits passing through the training centers at Gre Lakes, Newport, and Sampson was roughly equal. Th screening procedures at these three centers were identic and were administered by professional staffs of com parable ability. Ordinarily under such circumstances on would expect equal screening discharge rates at the thre centers. The discharge rates differed, however, since n recruit could be separated for inaptitude without th agreement of the commanding officer. At Great Lake the command was sympathetic to screening and gave th psychiatric unit complete freedom in setting the rate o discharge. At Newport the command held the unit to a moderate rate of discharge, while at Sampson, where the command was unsympathetic to screening, the discharge rate was held to a minimum. If screening were successful in lowering subsequent psychiatric attrition, it could be predicted that subsequent attrition would be in inverse ratio to the number of men screened out during training, i. e., the greater the psychiatric discharge rate at the training center the less psychiatric attrition during subsequent service among the recruits trained at that center.

Nine recruit samples, involving a total of some 14,000 men, were selected for study, one sample from each of the three training centers from each of the three months, April, June, and July, 1943. These men were followed through their subsequent period of service until December, 1945, and the incidence of medical discharge for psychiatric reasons was tabulated. Table 1 gives the results. They are in the expected direction. Great Lakes, with the highest screening rate, has the least subsequent psychiatric attrition. Sampson, with the lowest screening rate, has the greatest attrition. Newport lies in between. This confirms the hypothesis that the more men screened out for psychiatric reasons during training the less subsequent psychiatric attrition during service. Stated more simply, screening works.

A careful inspection of the table shows another interesting fact. There seems to be a curve of diminishing returns. As more men are discharged there is less and less return in lowered attrition rate. Thus in April, 1943, Great Lakes discharged almost twice as many men as did Newport, but its attrition rate was diminished by only one-sixth. One may ask whether the slight improvement in subsequent discharge rate is worth the large manpower loss entailed by the doubled number of training center discharges. There seems to be an optimal screening point beyond which increasing the number of screening discharges does not yield comparable results in reduced psychiatric discharges. Some caution apparently should temper the enthusiasm with which screening is practiced.

---

[1] Hunt, W. A.; Wittson, C. L., and Burton, H. W.: A Validation Study of Naval Neuropsychiatric Screening, J. Consult. Psychol. **14**: 35-39, 1950; A Further Validation of Naval Neuropsychiatric Screening, ibid. **14**:485-488, 1950.

THE CONCEPT OF A CONTINUUM

This curve of diminishing returns becomes understandable if one accepts the concept of a continuum of adjustment running from severe maladjustment at one end to relatively good adjustment at the other. Persons at the "good," or adjusted, end of the continuum have an excellent chance of adjusting to service, while persons at the "bad," or maladjusted, end of the continuum have little chance of adjusting and are consequently poor risks in terms of military potential. For instance, severe chronic neurosis is considered disqualifying for military service. It would be placed somewhere near the bottom of a continuum of adjustment. This does not mean that every neurotic recruit would necessarily fail to adjust to service. Out of any group of 10 men with severe chronic neurosis, one man might conceivably be able to maintain an acceptable adjustment. Since, however, the ratio of unsuitable to suitable men in this group would still be quite high (9 to 1), the value of the group as a whole would not be sufficient to justify their enlistment. Persons adjudged to be "normal" and therefore suitable for service would be placed at the other end of the continuum. This does not mean that all of them would adjust. Out of a group of 10 "normals," one might break down. The ratio of unsuitability to suitability (in this case only 1 to 9) would be sufficiently low, however, to make the group worth while in terms of potential service. As one proceeds up the continuum from "bad" to "good," groups of men selected from successive points show an increasing tendency for their members to render adequate military service. This continuum has been demonstrated clearly in several published research reports.[2]

The continuum appears in an early investigation[2a] involving a study of all the recruits sent to duty from the Newport Naval Training Center during September, 1941. A comparison of the subsequent service careers of men adjudged "doubtful" in adjustment during the brief screening interview with the careers of men adjudged satisfactory in the interview revealed three times as many subsequent neuropsychiatric discharges among the "doubtful" group. This doubtful group also contained fewer men who achieved petty officer status, fewer men who attended service schools, more men who failed in service schools, and more men who lost time through disciplinary difficulties.

The continuum appears more clearly in a study of 944 men interviewed at a receiving station in 1944.[2b] These men were referred for a psychiatric interview because of suspected psychiatric difficulty. As a result of these interviews the psychiatrist classified their difficulties as "mild," "moderate," or "severe." A review of their service records during the following year revealed that 6.5% of the "mild" group received psychiatric discharges, as compared to 20.2% of the "moderate" group and 89.7% of the "severe" group. In another study of men seen on the observation ward of the Newport psychiatric unit during the year 1942 and subsequently sent on to duty,[2c] the men were classified into four groups: those presenting no evidence of psychiatric symptoms and hence adjudged to be normal, those presenting symptoms not sufficiently marked to permit the use of a specific diagnostic category, those whose difficulty was severe enough to permit definite diagnosis, and those presented to the aptitude board for discharge but returned to duty as borderline cases. Study of their service records for two and one-half years of subsequent duty showed psychiatric discharge rates of 0, 8.7%, 15.9%, and 21.4% respectively for the four groups. These findings were repeated in two other samples investigated and reported in this study.

On the basis of a discharge rate of 21.4% for the group referred to the aptitude board, one may question the wisdom of the aptitude board in overruling the psychiatric unit and returning the men to duty. An interesting confirmation of this point appears in an unpublished study conducted by the neuropsychiatric branch, professional division, Bureau of Medicine and Surgery, Navy Department. A study was made of the service records of 217 men recommended for inaptitude discharge by training center psychiatric units but returned to duty by the aptitude boards because of their nonconcurrence with the psychiatric recommendations. Within the next nine months of service 34 of these men received medical surveys and 23 more received disciplinary discharges. Another 52 received administrative discharges. Only 108 completed their enlistments, and not a single one of these was rated during his service (only one achieved the distinction of even trying for a rate). They averaged 12 sick days each and had poor disciplinary records, totaling 95 captain's masts and 48 deck and summary courts martial. The drain on the resources of the Navy imposed by this group is evident.

Our findings demonstrate not only that a continuum of maladjustment exists but also that psychiatrists can recognize this continuum and make valid judgments concerning it. Basic to the practice of all neuropsychiatric selection are three fundamental assumptions: that adjustment exists on a continuum ranging from poor to good, that trained psychiatrists are able to place a man in his position on this continuum, and that from this placement valid predictions can be made concerning the man's future psychiatric behavior in the Naval service. Repeated researches raise these hypotheses from the level of logical assumption to that of demonstrated fact.

---

2. (*a*) Wittson, C. L.; Hunt, W. A., and Stevenson, I.: A Follow-Up Study of Neuropsychiatric Screening, J. Abnorm & Social Psychol. **41**: 79-82, 1946 (*b*) Wittson, C. L., and Hunt, W. A: The Predictive Value of the Brief Psychiatric Interview, Am. J. Psychiat. **107**: 582-585, 1951. (*c*) Hunt, W. A.; Wittson, C. L, and Hunt, E. B.: Relationship Between Definiteness of Psychiatric Diagnosis and Severity of Disability, J. Clin. Psychol. **8**: 314-315, 1952. (*d*) Hunt, W. A., and Wittson, C. L.: The Neuropsychiatric Implications of Illiteracy, U. S. Armed Forces M. J. **2**: 365-369, 1951. Hunt, W. A; Wittson, C. L., and Hunt, E. B.: (*e*) The Serviceability of Military Personnel of Low Intelligence, J. Clin. Psychol. **10**: 286-287, 1954; (*f*) Military Performance of a Group of Marginal Neuropsychiatric Cases, Am. J. Psychiat. **109**: 168-171, 1952; (*g*) Hidden Costs in the Utilization of the Psychiatrically Marginal Man, J. Clin. Psychol. **10**: 91-92, 1954. (*h*) Hunt.[1]

ESTABLISHMENT OF A "CUTTING" POINT

Once the relative serviceability of groups at the various points of the continuum has been established, it is necessary to decide on a "cutting" point, a point on the continuum below which it is not worth while to the Navy to accept a man for service. Since the techniques of "screening-in" are available to help the marginal man in his adjustment to the service, the cutting point may be set lower than would be advisable were not the supportive procedures of preventive psychiatry available. On the other hand, it must not be set so low that the cost of the men to the service is greater than their military contribution. The establishment of such a cutting point is a difficult problem, but these studies indicate clearly that it is possible to establish such a point on the basis of scientific data, rather than on the customary basis of unwarranted, a priori, and often fallacious and arbitrary administrative decisions.

In establishing such a point, two types of data usually are considered. The first is the direct cost in terms of the number of men who break down and cannot complete their enlistment. The second is the indirect or "hidden" cost to the services attributable to the poorer quality of service rendered by those marginally adjusted men who do manage to complete enlistment. The first is usually measured in terms of the psychiatric discharge rate among the group being evaluated. Most of the studies noted are of this type. Two more examples of such studies with special types of groups may be mentioned. The use of illiterates by the military services is a continuing problem under constant study and discussion by the services. Unfortunately this often is dealt with as a simple problem of educational handicap that can be solved by an investment in special education within the services. As any psychiatrist knows, however, the problem is greater than this. Many persons cannot read and write, not because they have never had the opportunity to learn but because mental deficiency makes them unable to learn, or personality difficulties make them choose not to. Any group of illiterates on closer examination will be found to contain a high number of persons of low intelligence and persons whose illiteracy is but one manifestation of some basic personality disorder. The prevalence of neuropsychiatric disorders among the illiterate group must always be taken into account in assessing the value of illiterates as a group to the military services.

The prevalence of such disorders has been studied in two groups of illiterate Naval recruits, numbering 940 men and 473 men respectively, who were given special literacy training at Camp Peary in 1944.[2d] In assessing the findings it must be remembered that these men are a "selected" group, since they presumably received a psychiatric screening originally at the induction centers and most certainly were screened at the Naval training centers where some of them were sent before being forwarded to Camp Peary. Despite this, the neuropsychiatric discharge rate during their training at Peary was 11% for the first group and 14% for the second. This is high, but a study of their subsequent discharge rate in the Navy during the year following completion of their literacy training was 3% and 3.4% respectively (compared to an over-all Navy rate of 1.5% at this time). Approximately 15% of these men accepted for training were psychiatric casualties by the end of the first year of service. This high psychiatric casualty rate must be taken account of in any estimate of the potential value of the illiterate group to the services.

Another study was made of men of low intelligence, with mental ages of 12 years 6 months or below.[2e] Three groups of recruits were studied: men of normal intelligence with no personality difficulties, men of low intelligence as defined above, and men of low intelligence who also had some psychiatric symptoms. All men had been seen on the observation ward of the psychiatric unit at the Newport Naval Training Center in 1942 and were subsequently sent to duty as fit to render service. In all, 644 recruits were involved. Their subsequent records during their three years of service were then examined. The psychiatric discharge rate for this period for the three groups was 2.1, 7.9, and 12.1% respectively. The bad conduct discharge rates were 0, 9.1%, and 10.2%. Three groups, totaling 550 men, seen during 1943 were followed for a period of two years. The psychiatric discharge rates were 1.1, 7.5, and 10.6% for these groups. Bad conduct discharge rates ran 0, 3%, and 7.7%. Medical discharges for other than psychiatric reasons also showed the same gradation in rates. If all three types of discharge (psychiatric, other medical, and bad conduct) are added together for the first sample, by the end of three years only 3% of the normal group had been discharged, 20.1% of the low intelligence group, and 32.5% of the group with low intelligence plus psychiatric symptoms. The second sample in two years of service showed combined rates of 2.9, 12, and 23.6%. Low intelligence is a costly handicap in the Naval service, particularly when it is complicated by problems of adjustment.

COST OF MARGINALLY ADJUSTED RECRUITS

In estimating the cost to the military services of utilizing marginally adjusted men, the assumption is sometimes made that this cost involves solely those men who are discharged before they complete their required period of service. It is taken for granted that, if a marginal recruit manages to complete his enlistment and to receive an honorable discharge at the end of his term, his service is *ipso facto* successful and he has demonstrated his worth to the service. Unfortunately, completion of service without discharge is no guarantee of the quality of the service rendered. Two further studies illustrate this point. In them the amount of hospitalization and disciplinary difficulty in psychiatrically marginal recruits who completed their enlistment was compared with the amount found in a control group of "normal" recruits.

Some 628 recruits were involved in the first study.[2f] They represented a control group of normals and groups of marginally adjusted men representative of five diagnostic categories: neurotics, schizoid personalities, alcoholics, persons of low intelligence, and asocial psychopaths. All of the men were seen on the observation ward at Newport by at least two clinicians with complete agreement as to diagnosis. All were sent to duty, however, as marginal cases capable of rendering adequate service; and all completed three years of service terminating in honorable discharge. The rate of hospitalization and of disciplinary difficulty among them was then ascertained. Hospitalization was defined as an admission to a Naval hospital for any reason whatsoever, and disciplinary difficulty was defined as any disciplinary difficulty ranging in severity from a captain's mast or deck court to a general court martial. Table 2 gives the results. Every marginal group had a significantly higher incidence of hospitalization than did the normal control group—from four to six times as high. Disciplinary infractions were also much more numerous in the marginal group, with the one exception of the neurotics, who were a bit better behaved than the normals. Another study using a smaller sample of 317 recruits has confirmed these findings.[25]

TABLE 2.—*Hospitalization and Disciplinary Infractions for Control and Marginal Groups (1942 Sample)*

No. of Recruits	Category	% Hospitalized	% Causing Disciplinary Difficulty
91	Normal controls	4.4	12.2
120	Neurotics	17.5	10.0
97	Schizoid personalities	24.7	26.8
102	Alcoholics	27.5	41.6
121	Men of low intelligence	24.0	45.0
97	Asocial psychopaths	20.8	62.0

As we have said elsewhere, "These results should not be interpreted as indicating that the marginally adjusted man cannot be utilized by the military services. They merely show that such men are more 'expensive' to the services, and that when their utilization is demanded by manpower needs it will be necessary to make provision for the added demands they will entail upon medical and disciplinary facilities. They also confirm the clinical picture of the maladjusted individual as one who, even when he is meeting the formal adjustment standards of his group, is doing so at a greater cost to the group's medical facilities and with greater friction upon its social organization than is his adjusted compatriot." [26]

Military efficiency should be the determining factor in establishing the exact cutting point to be used in selection, since the task is to produce a military establishment that can win wars. The attainment of perfect military efficiency, however, may be an impossibility, as there are two further limiting factors that must be considered in establishing standards for military service: manpower and economic cost. The manpower at our disposal is limited. The civilian economy also makes legitimate demands on available manpower, since men, to fight, must be fed and supplied with the weapons of war, and for these supportive functions men are necessary at home as well as at the front. Moreover, the final solutions must be economically sound and within the potentiality of the national economy. Thus in utilizing the marginally serviceable man it is necessary to keep in mind such factors as the added expense in training and maintaining him, and the subsequent drain on our national resources through the medical program of the Veterans Administration owing to the higher medical attrition rate among such marginal personnel. Our task becomes one of selecting as efficient a force as we can with the manpower available and within the economic potential of our national resources, of providing the necessary military and medical facilities for promoting maximum efficiency in those selected, and of maintaining this efficiency by supporting military and medical procedures.

While the factors involved are complicated, they nevertheless can be defined, and once defined they can be studied objectively, as the researches mentioned above demonstrate. The need for neuropsychiatric selection is evident. The value of the Navy program has been shown. We have the beginnings of a psychiatric science of manpower. A continuing research program investigating all aspects of psychiatric selection should provide scientific answers to the problems posed.

U. S. Naval Hospital, Portsmouth, Va. (Captain Raines).

RESERPINE (SERPASIL) IN THE MANAGEMENT OF THE MENTALLY ILL AND MENTALLY RETARDED

PRELIMINARY REPORT

Robert H. Noce, M.D., David B. Williams, M.D., Modesto, Calif.
and
Walter Rapaport, M.D., Sacramento, Calif.

The last quarter century has seen many forward strides in the management of patients with mental disease. During this period modes of therapy have been available that are far superior to the old-time method of whirling patients on wheels or ducking them into cold water. Sedation produced by various chemical compounds marked one step, and this was followed by the development of insulin shock, pentylenetetrazol (Metrazol), electroconvulsive therapy, nikethamide (Coramine) combined with electroshock, hydrotherapy, rehabilitation, and many others. None of these measures has proved completely satisfactory, for in each there are inherent disadvantages and, often, danger. "Hangovers" follow heavy sedation, and the physician is wary of possible brain damage following insulin therapy or of fractures concurrent with convulsive treatment. While the use of curariform compounds will decrease practically to nil the incidence of fractures, one then may have to deal with a new side-effect, namely, respiratory embarrassment. Therefore, psychiatrists have long been seeking a safe method or an agent that can help the mentally ill toward normalcy.

For centuries the Indian plant Rauwolfia serpentina has been used in the treatment of mental patients as well as those who suffer from insomnia, snake bite, anxiety states, and various other conditions. Hakim,[1] the Indian

---

Director of Clinical Services, Modesto State Hospital (Dr. Noce); Superintendent and Medical Director, Modesto State Hospital (Dr. Williams); and Director of Mental Hygiene, State of California (Dr. Rapaport).

The Serpasil used in this study was supplied by Ciba Pharmaceutical Products, Inc., 510 Morris Ave., Summit, N. J. Dr. R. H. Roberts and Mr. Elliot L. Poston of Ciba assisted in this project.

psychiatrist, claimed a recovery rate of 51% in 146 mentally ill patients using various Rauwolfia preparations and recovery in 80% when Rauwolfia was combined with electroconvulsive therapy. Results such as these naturally arouse both interest and skepticism as well as a desire to investigate the agent responsible. Recently, it has been demonstrated [2] that reserpine, a chemically pure derivative of Rauwolfia serpentina, is the chief active alkaloid in the plant and one that can be used safely and effectively both by mouth and by injection. Since this compound apparently exerts its hypotensive and sedative effects through action on the hypothalamus, the seat of emotional behavior, a rational basis for trial in the mentally ill is evident. Because our results in the first seven months of treatment with reserpine are so dramatic, we are presenting our preliminary findings to stimulate others to study reserpine in all types of mentally ill and mentally retarded patients.

USE WITH MENTALLY ILL

Selection of Patients.—Our first nine patients, all schizophrenics, began to receive medication Oct. 15, 1953. In January, 1954, four additional patients were given reserpine, and, during February, seven more psychotic patients were added to the study. The general response of our original group of patients after four and a half months of treatment led us to expand our study as rapidly as possible. At the time of this report we have 68 female and 6 male mentally ill patients taking reserpine by mouth or injection or both. For this investigation we have selected only those mentally ill patients who had the worst prognosis as far as recovery was concerned. They were the so-called back-ward patients who had been regarded as hopeless. A great majority had been mentally ill for a long period of time and had been entirely refractory to other methods of treatment. Some had shown temporary response to shock only to regress on discontinuation of the treatment. Three or four of this group had received over 100 electroshock treatments each. In fact, all of the first nine patients were selected from our maximum security wards.

Prior to this study these wards presented the usual picture of wards of this type, namely, 10 to 12 patients in seclusion, some also in camisole or other types of restraint. In addition, heavy sedation and electroconvulsive therapy, as well as hydrotherapy and wet packs, were necessary and being utilized daily. Owing to the raucous, hyperactive, combative, sarcastic, resistive, uncooperative patients, the ward was in a continual turmoil. Necessary daily tasks, such as feeding, dressing, and bathing the patients, were arduous and had a depressing effect on the personnel assigned to these wards. Large numbers of physically strong technicians were needed to supervise and care for such patients, many of whom had to be spoon fed because they were too uncooperative to go to the dining room. They kept other patients awake at night because of their noisy behavior, and some continually ran up and down the hallway. Although frequently attempted, the administration of electroconvulsive therapy was difficult because of the resistance of these patients to treatment and their intense fear reactions.

Dosage and Side-Effects.—When we began treatment we had no idea what dose of reserpine would be required to calm these violently disturbed patients; therefore, we had to "feel" our way along to determine an effective, yet safe, dose. Arbitrarily we started patients on 0.5 mg. of reserpine twice a day for one week and then increased the dose to 0.5 mg. three or four times a day during succeeding weeks. More recently, since obtaining a supply of the injectable form of the drug, we have initiated therapy with intravenous doses of 1 to 10 mg., starting reserpine by mouth 0.5 mg. four times a day. Frequently, it is necessary to repeat the injection each day or every other day during the first week of therapy, presumably until such time as effective blood or tissue levels of reserpine are attained. Now that a vehicle is available that permits intramuscular or subcutaneous use of reserpine, we believe that there will be much less need for use of the intravenous route. In our experience to date, no reactions have occurred at the site of intramuscular or subcutaneous injection. No alarming reaction has occurred even after intravenous or intramuscular injections of 10 mg. In all of the intravenous injections the full dose has been given at one time, i. e., no infusions of reserpine have been given. Currently we are administering reserpine in doses up to 0.2 mg. per kilogram of body weight when therapy is first started, and on that same day beginning oral medication of 0.5 mg. four times a day or 1 mg. twice a day.

We have encountered little difficulty from side-effects. When 5 mg. or more of reserpine is injected intravenously one usually sees almost immediate flushing of the face and extremities, and often the patient will shiver. Some complain mildly of vertigo or weakness, but none have been forced to remain in bed. Many of these patients have had blood pressures of 80/50 mm. Hg and have not complained of vertigo. They are fully ambulatory, and not one has fainted or fallen. Many of these patients are now on work detail in the dining rooms or laundry. One 38-year-old woman experienced five epileptic episodes while taking 2 to 2.5 mg. of reserpine daily. With reduction of reserpine intake to 1 mg. daily and the addition of diphenylhydantoin (Dilantin) sodium and desiccated thyroid to her regimen no further episodes occurred; she is now in a remission. Although this woman had not previously shown any epileptic tendencies, she had received more than 100 electroshocks. We do not know whether reserpine had any relation to her seizures, but we shall watch our patients closely for such developments in the future.

Results.—Since the advent of therapy with reserpine by the oral and parenteral routes, changes in the patients' attitudes and behavior have been noted. The patients do not manifest a fear reaction to the alkaloid and gladly express a preference for this drug over electroconvulsive therapy. Patients have undergone a metamorphosis from raging, combative, unsociable persons to cooperative, friendly, cheerful, sociable, relatively quiet persons who are amenable to psychotherapy and rehabilitative measures. Most patients have shown favorable weight gains,

---

1. Hakim, R. A.: Indigenous Drugs in the Treatment of Mental Disease, read before the Sixth Gujret and Saurashtra Provincial Medical Conference, Baroda, India, 1953.

2. Wilkins, R. W., and others: Reserpine in the Treatment of Hypertension: A Note on the Relative Dosage and Effects, New England J. Med. 250:477 (March 18) 1954.

and they have further expressed a desire to be assigned to work details. Hyperactive patients have become quiet, sedate, and cooperative in their behavior. Noisy patients have become quiet, while withdrawn and depressed patients have become alert and cheerful in their demeanor. At present on the wards where patients are receiving reserpine, seclusion, restraint of all types, sedation, and electroconvulsive therapy have been almost eliminated. It seems incredible that a drug can replace electroconvulsive therapy in this manner, but apparently such a drug has been found, and we expect it to revolutionize and facilitate modern psychiatric treatment.

Not only the patients have benefited but the ward technicians have adopted hopeful, optimistic attitudes, which are required for any positive and effective approach to therapy. They are overjoyed at the prospect of being converted from custodians to rehabilitation therapists. They are constantly requesting reserpine for all types of disturbed patients and would be alarmed if such therapy were discontinued, because they know that their duties would again entail restraining combative patients.

It is still too early to say what the ultimate classification of all these patients will be, for it appears that the longer a patient takes reserpine the better the chance for response. Every one of the first 20 patients improved to some degree, and 12 have shown marked improvement. Twenty are no longer psychotic, and eight patients have been discharged from the hospital. We hope and expect that the rest of our patients will show similar improvement as they continue to receive the drug. In psychiatry it is difficult to assess improvement by objective means. Prior to the availability of reserpine, "special incident reports" were filed at the rate of two to four per day from one maximum security ward. During six weeks after we began reserpine treatment only one report came from this same ward. One patient who was in the habit of striking someone at least once daily struck another patient only once in six weeks.

Comment.—While many patients show marked depression of blood pressure and pulse rate, many others show no change whatsoever. We have seen no correlation between effect on blood pressure and pulse and the calming effect. Patients whose pressure is reduced by one-half become no more tranquil than those whose blood pressure is unaffected. In reference to the effects of reserpine it is believed that some remarkable assistance to the homeostatic mechanisms has been induced. Disturbed, confused, disoriented patients become rational, oriented, pleasant, and more interested in their surroundings and other persons. They become more considerate of the feelings of others and are more responsive to their environment. We cannot simply describe the effects of reserpine by confining them to the tranquilizing action of the drug. In addition, we believe that a reorganization of the personality is taking place in an amazing, rapid, satisfactory manner. This belief is borne out by the favorable reorganization shown in some of the electroencephalograms after therapy with this alkaloid. We believe that in 75% of mentally ill patients reserpine will substitute for and excel electroconvulsive therapy, both in acute states and for maintenance. To date it has proved far superior to shock therapy for the maintenance of disturbed patients in a sociable manner. The undesirable "organicity" that results from numerous electroshock treatments is not noticed with reserpine.

The drug provides a far more rational approach to the treatment of the chronically and acutely disturbed patient than any other method we have used to date. It is still too early to state with certainty whether reserpine therapy must be continued indefinitely. We withdrew medication from four patients for two months. Two maintained their improvement, and two started to regress. Therapy was resumed and both improved again.

USE WITH MENTALLY RETARDED

Selection of Patients.—For our study of the use of reserpine in mentally retarded patients we selected on Feb. 5, 1954, 13 female patients whose intelligence quotients varied from 2 to 34. In age the patients ranged from 20 to 55 years, although most were in their 20's. The patients selected had the worst prognosis insofar as treatment, management, and possible recovery were concerned. As a group they were noisy, untidy, intractable, unable or unwilling to take care of bodily functions, and resistive both to ward personnel and to rehabilitation training.

Dosage and Side-Effects.—These 13 women were placed on a regimen of 1 mg. of reserpine by mouth daily after control blood pressure readings were obtained. Two additional patients, one man and one woman, were added to the series during March. No side-effects have been observed in any of the group.

Results.—After three months of treatment we feel that reserpine is of value to mentally retarded patients. Two have made remarkable improvement in their behavioral patterns. One 25-year-old woman with an I.Q. of 20 formerly had refused to dress or feed herself or to take any interest in her surroundings. She is now amenable to rehabilitation training, and at the same time she is dressing herself, feeding herself, acting in a friendly manner, and smiling frequently. Although she still does not talk, she appears to be more mentally alert and responsive to her environment and behaves in general as if she understands requests from the ward personnel. She sits at the table and eats acceptably. She is more sociable and gives the impression that she is grateful for her improvement. Another mentally retarded patient, a 42-year-old woman with an I.Q. of 34, formerly sat on the ward in a semicatatonic stupor, refusing to do anything for herself. Now she is more alert, not stuporous, regularly feeds and dresses herself, and has undergone a metamorphosis from a vegetable to a person who, though limited in her capabilities, is far more responsive to her environment.

A third patient, a 23-year-old man who had shown marked improvement, was a chronic "head beater" who required restraint 24 hours a day. His face, ears, and scalp were constantly bruised and cut from banging his head against the wall or from kneeing or punching himself. Reserpine, both parenterally and orally, has converted him into a different-looking person. Even without restraints he no longer tries to harm himself. His depression is partially relieved, and he now mingles occasionally with other patients on the ward.

The effect of reserpine on this group has not been confined to the patients alone. The morale of the ward employees has improved considerably, and they have assumed a positive, optimistic approach to the further training and treatment of these mentally retarded patients. While the other subjects have not responded like the three mentioned above, the afternoon and night shifts of psychiatric technicians report the patients to be much quieter and less hyperactive in their behavior. As a result, the ward is quieter at night and all the patients are more content.

Comment.—From this short-term study on the most intractable retarded patients at Modesto State Hospital, we think it reasonable to predict that mentally retarded patients in the higher I.Q. ranges will respond to a correspondingly greater extent in their socialization programs. Since reserpine has not produced a single side-effect in this group of 15 patients over a three month period, even at the doses employed, we believe that a further study of its use with this type of neuropsychiatric patients should be widely expanded.

SUMMARY

Seventy-four mentally ill and 15 mentally retarded patients received reserpine (Serpasil) for periods ranging up to seven months. All of these patients were given reserpine by mouth in an average daily dosage of 2 mg.; many had parenteral injections also. From our experience to date, we believe that about 80% of psychiatric patients show improvement that is attributable to the alkaloid. Depressed patients become alert and sociable, while the hyperactive, noisy, assaultive group becomes tranquil. The use of restraints, seclusion, and electroconvulsive therapy has decreased by at least 80% since this study began. Remissions have been produced in 20 patients, and 8 have been discharged. In the near future, leave of absence for all patients in remission is contemplated. As reserpine is used for longer periods of time, we expect remissions to occur in a higher percentage of patients. The response of four of the mentally retarded patients has been so encouraging that we are expanding our study in that area. Even though the dosage of reserpine has been high, side-effects have been infrequent and minor. We do not suggest that reserpine is a panacea in the treatment of the mentally ill and mentally retarded; however, the response of these patients has been so promising that we urge other investigators to evaluate the drug in all types of mental disease. If the results of long-term studies substantially confirm these preliminary findings, reserpine will be the most important therapeutic development in the history of psychiatry.

PROBLEMS OF THE OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE (HEALTH AND MEDICAL)

Frank B. Berry, M.D., Washington, D. C.

Health Service, Dr. Leonard Scheele. Furthermore, with the reorganization of the Department of Defense the old Research and Development Board was abolished, and all research and development problems were placed under the direction of the Assistant Secretary for Research and Development, Dr. Donald A. Quarles. After consultation with Dr. Lowell T. Coggeshall, the chairman of the Committee on Medical Sciences of the old board, it was determined that medical research and development should continue under his direction in Mr. Quarles' department. As a result there has been a close connection between our two offices, with the appointment of our chief military representative as a member of the permanent military coordinating committee representing medical research and development in the three services under the Assistant Secretary of Defense for Research and Development. As evidence of further joint interest in our mutual problems, the first meeting of Dr. Coggeshall's new committee was held with the Civilian Health and Medical Advisory Council, and ever since then there has been close and frequent contact between this office and Dr. Howard Karsner, representing the Navy research, Dr. Stanhope Bayne-Jones of the Army, and Dr. A. H. Lawton, Air Force.

Our major efforts during the past six months have been: (1) a continuing active interest in the armed forces blood program, in which our office cooperates closely with the National Research Council and the Red Cross; (2) a continuing study of the effective use of medical personnel; (3) the drafting of physicians and dentists; (4) the dependent care bill; (5) the scholarship bill; (6) NATO; (7) new studies: two in conjunction with the Public Health Service. one with the Federal Commissioner of Narcotics, and the last having to do with the leprosy problem in the Far East; (8) the MEND Program; and (9) hospital construction.

THE BLOOD PROGRAM

With the termination of blood plasma processing and overseas shipment of whole blood, the Department of Defense is no longer receiving any blood from the Red Cross except that provided military hospitals by the Red Cross regional centers on the same basis as that furnished the local civilian hospitals. The only defense blood being collected by the national blood program is for the Federal Civil Defense Administration fractionization program. In 1954 this will amount to about 900,000 bleedings as recommended by the subcommittee on blood of the Health Resources Advisory Committee to assist in maintaining a bleeding base. Owing to the importance of this and the need for public awareness of the importance of blood donations, our office is continuing to participate in the Public Relations Policy Committee in the Office of Donor Recruitment, Office of Defense Mobilization. From the standpoint of research, our office continues to maintain an active interest, with the office of the Assistant Secretary of Defense (Research and Development), particularly in the problem of the preservation of the formed elements of the blood. Our blood program is intimately associated with plasma expanders and the associated research. The Department of Defense is continuing to fractionate the remaining stores of dried plasma to eliminate the hepatitis virus and has also been stockpiling dextran, some polyvidone, and an increasing amount of serum albumin.

PERSONNEL PROBLEMS

With armed forces of about 3,000,000, medical personnel problems are still, and probably will continue to be, acute. On May 18, 1953, the Secretary of Defense directed a reduction of medical officers by June 30, 1954, to a Department of Defense ratio of three medical officers per thousand troop strength. This ratio excludes all military interns and one-half of the medical officers in residency training. No one likes set ratios because the missions of the armed services differ, and within each service the missions of the many branches differ. On July 1, 1953, there were 13,505 medical officers in the armed forces, and in June, this year, there were about 11,139, for a gross ratio of 3.35 medical officers per thousand troop strength. This ratio varies, depending on the day on which it is calculated and also on the overlap of new officers coming in for training with those going out. On the basis of the net Department of Defense ratio of 3 per thousand, the aim has been a ratio of 3 for the Army, 2.9 for the Air Force, and 3.26 for the Navy. Obviously the Navy needs a larger proportion of medical officers because of its special functions. Its ships each require one or more physicians; its submarine division requires special consideration, as do its air arm and the Marines; and at the moment it is the Navy that is having most difficulty with this reduced ratio. The Health Resources Advisory (Rusk) Committee is responsible for reviewing the needs of the civilian population for physicians in comparison with the requirements of the armed forces for medical officers. This committee coordinates with the Department of Defense, and it was on their advice that the present ratio was accepted. The same committee also acts as the National Advisory Committee to the Selective Service System and therefore is well aware of both civilian and military needs. Much criticism of this reduced ratio has arisen from the entire military population because of the difficulty in handling the large dependent care program.

Few persons realize that during the decade of 1930 to 1940 there was a marked decline in the birthrate, but since then there has been an even more rapid increase. which is continuing. During this same period, years have been added to the normal span of life in the United States so that it now averages about 68 years. The increase in our birthrate over the past 14 years plus the added number of the aged has increased greatly the demands for medical manpower. At the present time the available new supply is greatly restricted because of the low birthrate in the 1930's, and there is little likelihood of any actual increase in the annual supply of physicians for another five years because of this. Also, there have been enormous demands for highly skilled manpower by the introduction into modern civilization of the electronics industry, the rapid expansion of television, the increased demand for physicists, chemists, and engineers, and the great development of the automotive and airplane industries, without any elimination of needs of older industries. Coincident with this, the medical profession has greatly expanded its residency system so that now about 25,000 of the younger physicians are absorbed by this phase of their training. Finally, there has been a tremendous increase in research and its demand for skilled workers plus an over-all increased demand for medical services due to higher standards of health and growing national income. The result of all this is simply that the demand exceeds present supplies of medical manpower, and both civilians and military are likely to feel the pinch for some years to come.

THE DOCTOR DRAFT

Closely allied with personnel problems is the doctor draft. The "Doctor-Draft" law expires on June 30, 1955. So far no provisions have been made for its continuance; in fact, our office hopes and expects that this will not be necessary and that the needs of the armed forces can be supplied through the regular draft law. In order to prepare for this, as most physicians know, our office has tried to ascertain the preferences of the fourth year medical students. At first this was done purely on a trial basis. Realizing, however, that this year's graduating class will be the intern group that will be finishing their year in June, 1955, we obtained the concurrence of the Selective Service and the Bureau of the Budget to prepare and issue to all the medical schools a set of forms to obtain a certain amount of basic information on these medical students. We have asked them their choice of service; the time they would prefer to enter on duty, whether after internship or internship plus one year of residency; and what type of residency they desire. The services realize that they must plan a system of deferrals that will be fair to the interns and residents concerned, the hospitals, and the services. Needless to say, all will have to serve eventually, but we should like to follow the desires of the interns and residents as far as possible. This is particularly true for those desiring entry into the service immediately after internship, and with this group satisfied the rest of the problem naturally becomes somewhat simplified. Furthermore, we are now urging the interns to accept a reserve commission during their internship. This will enable those who desire early service to be called in July after their internship, as it now takes about three months to clear each person from a security standpoint. It will also allow the others, together with the services, to know about when they will be called. This is the only method we have at our disposal to afford men who will fall within the draft any protection as to time of call; inasmuch as we are trying to cooperate with them, those who do not desire to cooperate with us will naturally not receive too much sympathy if they choose to rely entirely on their chances with the draft. We hope that all fourth year students will cooperate wholeheartedly, and it is our opinion that it is largely the fault of the deans of those schools whose students fail to respond. The group initially deferred still propounds a problem as to the fairest way to solve their problem on behalf of the three parties concerned—the person, the hospital, and the Department of Defense. We are sure, nevertheless, that this can be worked out. Obviously, however, not all can be deferred as they wish, since the actual needs of the services must come first; but everyone should remember that the services do not want all interns, and, as far as possible, they prefer more mature and better trained persons such as residency training produces. Although I have been speaking only of physicians, this same matching plan has been applied to the dental schools so that their graduates will know their time of call into the service.

MEDICAL CARE FOR ARMED FORCES AND DEPENDENTS

Dependent Care Bill.—During the past year a bill to provide medical care for dependents of members of the armed forces has been introduced to Congress. This follows mainly along the lines of the Moulton Commission Report from a study of this problem. The aim is to equalize dependent care for both those who receive it in service hospitals and those who receive it in civilian institu-ns. Dependents in service hospitals now pay what is nown as a subsistence charge of $1.75 a day. According to the provisions of the bill, when treated by an outside physician these dependents will pay $10 as an initial charge and then 10% of the total bill, with certain limitations so that they will be protected against too large a bill. This is about the same percentage that they now pay in military installations. We do not look on this as a spread of socialized medicine but rather regard it as a necessary adjunct to the military pay and also as a morale factor, for the men in the armed services will realize that their dependents will be cared for wherever they may be. Everyone accepted this and no one gave it a thought when the size of the armed services was 300,000. With a growth to 3 million, however, the problem has come to the fore and has become acute for the families of our servicemen. Even moderate-sized cities cannot cope with the large increase of servicemen and families. With the reduced ratio of physicians in the armed services and no increase in military hospital facilities the military itself cannot care for the dependents; hence, the need to spread the load. Nor is there any desire on the part of the military to increase their hospital building. Many present installations badly need replacement, and the only new installations planned are in places with heavy military quotas where no federal hospitals and an inadequate supply of physicians now exist. The bill itself reserves to the Secretary of Defense the right to provide insurance coverage instead of the $10 plus 10% charge, if such a plan seems better. Up to the present time, however, the insurance companies have been reluctant to give any firm figures on the cost of insurance until they have seen how the $10 plus 10% charge operates.

Scholarship Plan.—At the present time the medical service in the armed forces is manned by about one-third regular corps and two-thirds reserves. This is an unsound ratio and should to a great extent be reversed. Some of the factors that will improve the attractiveness of a service career are: increased stability in location; the possibility of obtaining a hospital position similar to a senior academic standing in civilian life, which permits a senior officer to become identified with teaching, research, administrative work, or a specialty career in his chosen field on the basis of long-term tenure at a given station; a pay scale more comparable to that in civil life; and the reintroduction of the 20 year retirement privilege. This last has already occurred with the passage of such a permissive bill by the Congress. As a means of adding more stability to the services, a scholarship bill has been prepared for medical and dental students that will provide tuition and an allowance of $133 a month while in medical or dental school. After internship the student will repay his scholarship on a year-for-year basis in the service with a minimum of three years. This plan already works well in Canada, where it is similar except for a minimum service requirement of five years with a promise of at least one year in professional work. Our office hopes to be able to present this bill to the Congress soon.

INTERNATIONAL PROBLEMS

NATO and World Health Organization.—Our close cooperation with the World Health Organization and the NATO Medical Services continues, and this spring the Department of Defense was represented at meetings of both organizations in Paris and Geneva. Following the Paris NATO meeting, I had an opportunity of visiting three of the Air Force hospitals in England. They are doing high quality work and represent American medicine excellently.

New Studies.—In cooperation with the Public Health Service and Foreign Operations Administration, we are much interested in the establishment of an *ad hoc* committee to correlate and help the numerous commissions on nutrition that are studying that problem in various parts of the world. In addition to this and in conjunction with the Public Health Service, we are trying to initiate an intensified program of tuberculosis prevention, follow-up, and case finding in the soldiers, sailors, and their families who return to the continental United States from the Far East and from Europe. At the present time there is no screening of the household servant personnel for these families overseas. As a result, occasionally persons with active tuberculosis are acting as cooks or nurses for some of our overseas families. In like manner, although to a lesser extent, we are concerned with the leprosy problem in the Far East, where it is so prevalent. Here early diagnosis is difficult, but fortunately the Caucasian race is highly resistant. Nevertheless, we realize that the danger exists, and we should like to do all that we can to prevent it. At the present time the tuberculosis problem is being studied in the Far East by the Army, and work on the problem of leprosy is under way both in Okinawa and Korea.

During the past three years there has been a steady, though not alarming, increase in drug addiction among some of our troops in the Far East. This is largely confined to the same groups as in the larger cities in our own country, those with poor family backgrounds and minimum education.

NATIONAL PROBLEMS

The MEND Program.—The program for Medical Education in National Defense, introduced in five medical schools during the past two years, primarily concerns civil defense rather than the Department of Defense. With this in mind, the Civilian Health and Medical Advisory Council together with the Committee on Medical Sciences, Research, and Development in the Office of the Secretary of Defense and with research representatives of the Army, Navy, and Air Force voted unanimously that the Department of Defense should not expand its support for this program, although at the same time they expressed sympathy with it and all agreed that it is worth while. We have continued the program for this year and next but believe that this is properly the responsibility of the medical schools themselves together with the civil defense agencies.

Hospital Construction.—At present our office is working in close cooperation with the Assistant Secretary of Defense (Comptroller), the Assistant Secretary for Properties and Installations, and also the Bureau of the Budget in studying the whole hospital replacement and construction program and the relation of the armed forces hospitals one to another and also to other federal hospitals in nearby areas. As defense policies change there is also alteration in hospital planning. You may be sure that new hospital construction or expansion of old facilities is kept at a minimum, but a replacement program for old temporary structures is becoming increasingly necessary, with the new hospitals limited to areas where the service load is large and where other service hospitals are nonexistent. We do not believe that it is good policy, except in emergencies, to send active members of the armed forces to the Veterans Administration hospitals, and, furthermore, we are opposed to establishing any precedent for the care of dependents of members of the armed forces through the Veterans Administration. Our whole aim is toward increased use of present structures insofar as personnel will permit.

TREATMENT OF CANCER ON A HOME CARE PROGRAM

Isadore Rossman, M.D., New York

A pioneering project for the home treatment of patients with chronic diseases was established at Montefiore Hospital in January, 1947. Various medical and economic considerations were responsible for the launching of the home care program.[1] For one thing, an extensive experience at this hospital had shown that there were long periods in the evolvement of chronic illness during which the patient did not need most of the specialized facilities of the modern hospital, although he was too ill to return to the home as this environment ordinarily functions in relation to medical practice.[2] Further, the increasing incidence of the chronic diseases had put great demands on our hospital beds. A long waiting period before admission meant for some patients an interim of avoidable deterioration and suffering. A third and most significant consideration was the psychological welfare of the patients: many of them developed anxiety and depression during long periods of hospitalization during which the warmth and familiarity of the home were replaced by the unavoidable drabness and consolidated suffering of the chronic disease ward.

From the inception of the program it was felt that no compromise with the highest standards of hospital practice was permissible. The patients were treated as hospital patients in an extramural location, for it was our belief that any departure from this attitude would represent an injustice to the home care patient. The program is therefore hospital oriented, and the treatment of a patient on home care does not differ significantly from the treatment of a patient in the hospital. For example, the physicians on the home care project are also attending physicians on the wards and are thus often able to follow the patient without a break in the continuity of medical care despite the shifting of locale. Since the relation between hospital and home is close, flexible, and dynamic, the patient may be readily shifted from one to the other, depending on his changing medical needs.

Medical evaluation for transfer from hospital to home care is made by a home care physician who reviews the history and sees the patient while he is still on the ward. A patient is medically acceptable for home care when he no longer needs such strictly in-hospital procedures as

---

From the Division of Social Medicine, Montefiore Hospital, Bronx, N. Y.

[1] Bluestone, E. M.: Planning for Long-Term Illness, M. Clin. North America 33:587-597 (March) 1949. Cherkasky, M.: Prolonged Illness, J. M. Educ. 28:15-20 (July) 1953; Montefiore Hospital Home Care Program, Am. J. Pub. Health 39:163-166 (Feb.) 1949. Rossmann, I.; Eger, S. D., and Cherkasky, M.: Treatment of Cardiac Patients on a Home Care Program, Mod. Concepts Cardiovas. Dis. 19:71-72 (July) 1950.

[2] Young, D., and Rodstein, M.: Home Care of Patients, J. A. M. A. 152:987-990 (July 11) 1953.

surgery, radiotherapy, or prolonged intravenous therapy, and when it is judged that further medical treatment can be carried out in his home. Such treatment may involve blood transfusions, abdominal or chest taps, administration of oxygen or hypodermics throughout the day, or physiotherapy and rehabilitation—in fact, many procedures that before the advent of our program were usually associated with an in-hospital status. All of these are, in our experience, readily performed in the home. Not all the patients require such active medical therapy at the time of transfer; some are accepted for whom such therapy is foreseen as an inevitability, although immediate medical needs are relatively minor. The latter group are nonambulatory, and so could not be treated in the outpatient department.

Maintaining a patient at home in the maximum possible medical and social health involves as a basic procedure a searching evaluation of the home environment. This is done by the social worker after the provisional medical acceptance. The social worker determines whether the patient is wanted and will be accepted at home and whether his needs for attention and time can be satisfied. The fulfillment of social criteria may necessitate various forms of aid to the family; for example, a housewife burdened with innumerable chores and family responsibilities may be unable to give enough time to an ill husband without serious neglect of the home or children. One answer to such situations has been evolved by subsidizing housekeeping aid, thus freeing the wife to perform the necessary functions of nurse and mother. Since our patients are medically indigent, it is often necssary to call on the community's welfare agencies for nancial support before an adequate home care environment can be set up.

PERSONNEL AND EQUIPMENT

The maintenance of hospital standards of practice in the home calls for the contributions of many persons working together in the patient's behalf. In addition to the social worker who keeps the family functioning as a unit, and in whom a psychiatric orientation is invaluable, the following services are offered to the patient as needed.

Medical.—The home care physician visits on a schedule of one or two calls a week, or as often as daily when necessary. Emergency service is available on a 24 hour basis, with one physician always on call. One physician is charged with primary responsibility for a given patient, and he makes the scheduled calls. The treatment is supervised by an oncologist who once weekly accompanies the home care physician to the patients who present therapeutic or diagnostic problems. A group of consultants who see the patients on a house call basis are utilized as the need arises. On various occasions, cardiologists, dermatologists, psychiatrists, dentists, and other specialists are sent into the home. A note of the findings for every visit is entered in the patient's chart kept in the office of the home care department.

Nursing.—Nursing is supplied on a contract basis with the Visiting Nurse Service of New York.[3] The nurse visits as often as ordered by the physician, gives general nursing care, changes dressings, performs irrigations, and the like. One of her most important functions is to teach the family necessary nursing procedures involved in the care of the bedridden patient, such as the technique of administering hypodermics. In our experience, a member of the family thus instructed becomes a devoted nurse second to none. Through prior arrangement the nurse is always present for blood transfusions and other special procedures.

Physiotherapy and Occupational Therapy.—A skilled full-time physiotherapist working under the supervision of a home care physician trained in physical medicine is available to any patient as often as needed. A full-time occupational therapist visits all patients routinely and, if necessary, works in conjunction with the physiotherapist. Liaison between the various persons working on the program is maintained on a personal basis and through formal weekly conferences attended by a representative of the visiting nurse service.

The hospital lends much of the equipment, such as hospital bed, wheelchair, oxygen tank, and scales, needed by the patient during his illness. The hospital pharmacy fills the prescriptions, which are written at the bedside and presented by a relative. Blood for cross-matching and blood chemistry studies is drawn in the home and analyzed in the hospital laboratories. Special equipment for transfusions, paracenteses, and spinal taps is drawn from the hospital's supply rooms. The hospital's blood bank supplies the necessary blood. Follow-up roentgenograms are obtained at the hospital, with transportation by chartered ambulance made available to the patient. In a similar manner, patients of unusual interest are brought to the hospital for presentation at conferences.

ATTITUDE TOWARD CANCER

It is our belief that a prime necessity on a program of this sort should be a healthy and active orientation toward the problem of cancer. We have been impressed repeatedly by the phobic and passive attitudes toward cancer shown not only by the laity but by some physicians as well. These conceptions, often unconscious in nature, take various forms, but the basic one seems to hold that the cancer-stricken person has forfeited some of the status accorded to other chronically ill patients. This cannot be due alone to the fact that his days are numbered, or considered numbered, for a similar forfeiture of status does not occur in regard to patients with advanced nephritis or heart disease, for whom the prognosis for duration of life is often worse than for the cancer stricken. The common dichotomy of opinion is illustrated in the use of such elementary treatments as blood transfusions: the correction of anemia in nephritis is justifiable; in cancer, wasteful.

Our approach to the cancer patient receiving home care, since its inception, is the same as prevails on the wards of our hospital. We regard the cancer patient as a human being with a chronic illness of indeterminate duration, whose need for energetic medical treatment is in no way compromised by his diagnosis. That our modes of treatment are for the most part inadequate we take to reflect on the present state of medical practice and not on the patient. It is clear that many practical consequences are derived from this sort of working philosophy; for example, we transfuse liberally. We do not regard

---

3. Thompson, J. D.: Nursing Service in a Home Care Program, Am. J. Nursing 51: 233-249 (April) 1951.

inanition as a necessary consequence of cancer, and considerable effort and money are spent on maintaining dietary intake.

In a framework that holds for no compromise with basic medical and humanitarian principles, there are many rewards for the physician as well as for the patient and his family. In some homes the impact of our program on a depressed patient and anxious family has been psychologically enormous. A listless, feeble patient will brighten up, gain weight and strength; the home atmosphere becomes transformed. It would appear to us that the question of the duration of such improvement is irrelevant.

The patients referred to our program for the most part have advanced neoplastic diseases falling into the so-called hopeless category. It is our opinion that such categorization should be retrospective and not existent during the patient's lifetime. Prognosis in cancer is based on statistical experience that may go awry in any given instance. It further implies an omniscience in regard to the biology of tumor growth that is better suited to a prophet than to a physician. We have several patients on our program who, according to well-informed predictions, should have died months to years ago. Further, we are sometimes gratified to have a "preterminal" patient improve to such an extent that further home care is no longer necessary. Such cases are admittedly infrequent but alone justify a program of energetic medical care. An example of such a patient followed on home care for many years is given in the case below.

REPORT OF CASES

Case 1.—A 54-year-old man was admitted to the home care service on June 13, 1947. He had had three previous hospitalizations at Montefiore, beginning in September, 1946, for a pathological fracture of the thoracic spine. On a readmission this was shown to be due to multiple myeloma. Because of the onset of a cord compression syndrome a laminectomy was performed in April, 1947, at which time extensive myelomatous involvement of the lower thoracic spine was found. After laminectomy there was marked improvement in neurological findings, and the patient was discharged to home care in a body cast and completely bedridden. He has been on the home care program with eight readmissions to our hospital in the period 1947 to 1954. During the first year on home care his chief needs were for nursing attention and control of back pain and radiculitis. He was hospitalized for six weeks for transfusion hepatitis. Repeated roentgen studies during this time demonstrated progressive osteolytic and osteoporotic involvement characteristic of multiple myeloma. In the latter half of 1948 he showed increasing hyperglobulinemia and anemia. The hemoglobin level dropped to below 6 gm. with a red blood cell count of less than 2 million. This required numerous transfusions both in the hospital and at home. Several readmissions were necessitated for severe bone pain, mostly in the thoracic spine, for which roentgen therapy was given. Throughout 1949 the patient had recurrent carbuncles and furuncles, which were treated at home with penicillin and incision and drainage. There was a fifth admission to the hospital for x-ray therapy to a large carbuncle of the neck. Progression of lesions and continuing anemia were noted throughout 1949, and the patient received four further transfusions at home. A short course of urethan therapy was initiated but discontinued because of gastric intolerance.

The patient began to show significant improvement in 1950 after three years on home care. The hemoglobin level rose into the low normal range, and the globulin level, which had been from 7 to 8 gm., fell to 4 to 5 gm. The improvement has been maintained since, so that no further transfusions have been necessary. Repeated roentgen examinations, one or more times a year since 1950, have revealed little or no progression of the myelomatous lesions. A severe morphine addiction was cured in a hospitalization in early 1950. In the past three years no further radiotherapy has been needed, and the patient has presented chiefly a supervisory medical problem. Because of extensive osteolysis of the femurs, ambulation has not been possible. He has alternated his days between lying in bed and getting about in a wheelchair, wearing a back brace. At present, apart from the old bony lesions and a moderate hyperglobulinemia with typical abnormal electrophoretic changes, there is no evidence of activity of the myelomatous process. The bone marrow is no longer diagnostic for multiple myeloma, and the patient, now in his eighth year since the illness started, is a striking example of long-term remission for this neoplastic disease.

An unfortunately more typical example of a brief stay on home care with intensive therapy at home is the following case:

Case 2.—A 41-year-old woman had become ill 10 months previous to admission, with symptoms of fatigue, weight loss, and edema of the legs. An abdominal mass was palpable, which on exploratory laparotomy was found to be a malignant lymphoma. During the ensuing nine months she had multiple hospital admissions, mostly for transfusions and radiotherapy. Despite all of these, she pursued a downhill course, and bilateral pleural effusions, ascites, generalized lymphadenopathy, and anemia developed. A course of triethylenemelamine just prior to admission to our hospital had no effect on the clinical findings. In the hospital she was bedridden and addicted to narcotics and appeared to be close to death. After two weeks the patient requested that she be returned home, complaining that she had spent almost all of the previous year in one or another hospital. The family group consisted of a husband and a 9-year-old daughter who were warm and devoted in their attitude. Although the patient's condition was considered to be so far advanced that continued care in the hospital was appropriate, she was accepted on home care. It was considered psychologically and otherwise desirable to keep the family unit together. She remained at home for six weeks. During this time she received 20 visits from our physicians. For the first 10 days she received nursing visits on alternate days for general nursing care and bed baths. Subsequently she had an eight hour a day nurse supplied through the cooperation of the National Cancer Foundation. During her stay on home care she received corticotropin gel daily in doses varying from 40 to 80 units. A course of nitrogen mustard therapy consisting of four daily injections was given. Blood was drawn at home for blood cell count and cross matching, and, after a hemoglobin determination of 6 gm., a packed red blood cell transfusion was given. For a time the patient showed marked clinical improvement attributed to this therapy, with shrinkage of lymph nodes, decreased chest fluid and peripheral edema, and improved appetite and strength. During the last few days of home care her condition deteriorated. There was a regrowth of nodes and rapid reaccumulation of fluid. Rehospitalization was advised, and at first refused. The patient was finally readmitted six weeks after her discharge; she died in the hospital two days later. The autopsy findings were those of far-advanced Hodgkin's disease.

During the five year period from 1947 to 1951 almost 400 patients with carcinoma were treated at home. The average stay on home care during this period was 52.3 days. Depending on the type of malignant disease, the medical and other needs of these patients varied considerably. The range of neoplastic diseases successfully treated is indicated by the following breakdown, in which patients are classified by the primary site of the tumor:

Breast	92
Lung	43
Rectum and rectosigmoid	35
Stomach	35
Colon	23
Blood dyscrasias	19
Cervix	16
Ovary, uterus, and vulva	14
Central nervous system	14
Prostate	13
Gallbladder and liver	12
Pharynx, tongue, and nasopharynx	12
Kidney	10
Genitourinary tract	9
Esophagus	8
Lymph nodes (Hodgkin's disease)	7
Pancreas	7
Skin	6
Thyroid	4
Bone	3
Miscellaneous	9

The problems and complications presented by the different categories of patients vary, as is true also of the duration of the disease. Thus patients with carcinoma of the lung may present problems of recurrent pulmonary infection, those with gastrointestinal neoplasms may have as frequent complications bleeding and obstructive phenomena, and so on. Our cumulative experience indicates that all the patients can, throughout certain stages of their disease, receive very adequate treatment in their own homes.

Despite a rise in cost of medical care throughout this period, the cost per patient day with the home care program has for the most part been between $3 and $4. This is roughly one-fourth of the cost to the hospital when the patient is on the ward. More important, however, than the considerable saving have been the repeated expressions of gratitude from both patient and family for a program that has enabled these unfortunate persons to spend many of their last days in their own homes.

E. 210 St. near Bainbridge Ave. (67).

A. NEW DESIGN FOR SERVICE AND TEACHING IN THE OUTPATIENT DEPARTMENT

John P. Colmore, M.D.
and
Stewart Wolf, M.D., Oklahoma City

For the past two years a new system of caring for the ambulatory patient and for teaching medical students in the outpatient department has been in effect at the University of Oklahoma Hospitals. Traditionally, the emphasis in teaching internal medicine has been on the bed patient. The outpatient department has often been a crowded accessory that has been adapted neither to the comfort and welfare of the patient nor to the effective teaching of the student. Recent developments, especially in combating infections, have reduced the need for bed care in treating illness and have emphasized the plight of the ambulatory patient. The focus on the treatment f patients while they are in contact with their day-to-day environment has given rise to a growing awareness among physicians that social and psychological forces may be potential pathogenic factors in disease. A "comprehensive" point of view has developed that cuts across traditional boundaries among specialties and holds that adequate health for the individual cannot be achieved until something is understood of his circumstances of ving and of his attitudes, aspirations, and patterns of action.

Before the new program was instituted at the University of Oklahoma on June 15, 1952, the outpatient department at the University Hospitals was organized along traditional lines with a preliminary screening clinic and a multitude of specialty clinics. Teaching was done in the face of heavy service responsibilities and without much opportunity for continuity of care. Much of the student's time was spent with the thick charts of patients with whom he was not familiar. After a brief glimpse, the student often shifted the patient to another clinic. There was little opportunity for inculcating into the student a sense of continuing responsibility for his patient. As in most medical schools the supervision of the student was relegated to junior faculty members who considered the outpatient department a necessary but not very rewarding qualifying step on the way to faculty promotion and the privilege of attending inpatients. It was hoped that providing each patient with one fourth year medical student to follow his period of treatment in the outpatient department, regardless of what clinic he attended, would result in a more clean-cut diagnosis, better care for the patient, less waste motion and duplication of effort for the attending physician and clinic personnel, and an attitude on the part of the student of assuming responsibility for his patient. These aims required reorganization not only in the administration of the outpatient department but also in the teaching curriculum.

The first step was to create "status" for the outpatient department. There was a good deal of talk about ambulatory medicine, an important unexplored horizon in medical education. The faculty readily recognized that clinical experience and maturity were required for really skillful outpatient teaching. Thereupon, the most senior faculty members accepted the challenge of outpatient teaching along with their younger colleagues.

ORGANIZATION OF THE CLINIC

Fortunately, shortly after this program was inaugurated it was possible to put it into operation in a well-equipped, air-conditioned, new building that had been specially designed and constructed as an outpatient department. Most of the new patients are referred to the University Hospitals by practicing physicians, health departments, or welfare agencies. Approximately 25 new patients are accepted each day. With the exception of expectant mothers who are seen by the third year students as part of their obstetric clerkship, all patients 14 years of age or older, regardless of the reason for referral, are assigned first to the medicine clinic, where a careful general examination is made by the fourth year student under the supervision of his instructor. If referral to other clinics is considered necessary, the student arranges for the patient to visit the clinic on a day when he, too, will be there. On the appointed day he presents his patient to his consultant without delay and confusion, avoiding duplication of the history and examination. A few new patients have been sent directly to clinics other than medicine when the number of new patients was greater than could be accepted or when the referring

---

From the Department of Medicine, University of Oklahoma School of Medicine and the University Hospitals.

papers indicated clearly the need for a specialized procedure only. Study of patients in the medicine clinic has been facilitated by making a fluoroscope and a direct-writing electrocardiogram immediately available in the clinic area. The faculty are encouraged to instruct the students in the use of these instruments and in the interpretation of findings.

Most medical specialty clinics were eliminated, and the specialists were assigned to the medicine clinic, so that an expert in each field was available for brief informal consultation at nearly every clinic session. Some specialty clinics were retained either to deal with an accumulated body of patients who had come to the clinic prior to the new program or to bring together special patients for study. The retained specialty clinics included diabetes, allergy, arthritis, and endocrine. In addition, a special diagnostic heart clinic was maintained primarily for postgraduate instruction and to provide expert consultation and diagnostic services to referring physicians, including such procedures as angiocardiography and catheterization. Most new patients with cardiac disorders, as well as diabetes, endocrine disturbances, and asthma, are treated in the medicine clinic.

The altered attitude toward specialty clinics, plus the fact that referring a patient meant referring him to one's self in another clinic, reduced referrals of patients among clinics approximately 70%. This meant less crowding, less waiting on benches and in lines, and less duplication of effort. There was immediately less congestion in the outpatient department as a whole. Crowding and confusion were further reduced by systematically screening the large number of patients who had been attending the clinic for months or years at the time our new program was inaugurated. This work was gradually accomplished by one or more medical residents with the help of the clinic director. In some instances, an attentive ear and a careful explanation were all that were required to dispose of the patient's problem. Thereafter, the medical residents assigned to the outpatient department have continued with their "mopping-up" type of activity, undertaking responsibility at the end of the year for any patients of graduating students who still need outpatient care or observation.

ASSIGNMENT OF FACULTY

In many schools an important barrier to effective care and teaching in the outpatient department is the problem of engendering in the part-time staff sufficient interest and enthusiasm for assignment to the outpatient department. We have attempted to deal with this problem by removing the stigma of a "junior" service from the outpatient department. As mentioned earlier, the most senior men take their turn. Service by a faculty member in the medicine clinic is clearly understood to be a teaching assignment. Although the instructor, of course, carries the legal responsibility for the patients, the recording of history and physical examination is done altogether by the students, except for a few scattered short periods when the students are on holiday.

The first group of instructors comes to the clinic at 9:30 a. m. By this time the students who began their study of the patients shortly after 8 a. m. have usually completed their work, including the examination of one new patient and as many revisits as were scheduled for that day. Each instructor is responsible for four students. He is expected to review each case, check the findings, and teach and grade the student on his performance. During the course of each morning the director of the clinic selects four patients with especially lengthy or instructive problems in internal medicine to hold over for the afternoon clinic "seminars." These are conducted by two attending physicians who are especially skilled in teaching. Each one checks two students from 12:30 to 2:30 p. m. By this time opportunity has been afforded to complete the patient's roentgenograms and blood and urine studies. so that there can be a more definitive discussion of the problem than was possible for the morning patients. The clinic soon hopes to have a surgical consultant available prior to the afternoon session so that the opinion and recommendations of the surgeon can be taken into account in formulating a plan of action.

During the coming year, a psychiatrist, too, will be available in the afternoon for consultation and to supervise students in therapeutic interviews with suitably selected patients. Patients for psychotherapy will be selected by the students and consultant from those seen in the morning medicine clinic. Thereupon, each student will arrange for his patient to visit at weekly or other intervals during the afternoon hours when the supervising psychiatrist will be on hand.

ASSIGNMENT OF STUDENTS

At Oklahoma the full fourth year course is 44 weeks. Twelve weeks at some portion of the year are spent on preceptorship and 5½ weeks on inpatient obstetrics and anesthesiology; the remaining 26½ weeks are devoted to the outpatient clinics. Except for periodic assignments to the dermatology and radiotherapy clinics each student spends two full days each week in the medicine clinic, two half days each in surgery and pediatrics, one-half day in gynecology and one-half day in mental hygiene clinic or various community health clinics, such as well-baby, antenatal, syphilis, and tuberculosis. Assignment to surgical specialty clinics is made within the two weekly sessions allotted to surgery. The medical specialty clinics are conducted without students, since the students see the specialists and treat patients in their various categories while they are in the medicine clinic. On Saturday morning, when none of the clinics are in session, the director of the clinic conducts a two hour "follow-up" session with the students in which the most instructive experiences of the week are reviewed. In another group session from 3 p. m. to 4 p. m. on Tuesday, a student presents one of his patients who has been admitted to the hospital from the outpatient department and whose course has been especially instructive. This conference is designed primarily to encourage the fourth year students to follow those of their patients who have been admitted to the hospital. Secondarily, it offers another opportunity for bedside instruction on important diseases. Other opportunities for classroom instruction are afforded every other Wednesday from 3 p. m. to 4 p. m.

The student who first sees a new patient in the medicine clinic then becomes his "doctor." All the advice and consultation he requires is readily available to him, but he is made to realize that the patient is his responsibility until the problem is either solved or dealt with adequately. Each student keeps his own appointment book, arranging whenever possible for his patients' visits to coincide with his own schedule. He tries to space the visits of the patient whom he is following to span the periods when he is out of the clinic on holiday, obstetrics, or preceptorship. He assumes responsibility for inquiry into the reasons for broken appointments, considers their pertinence to the illness, and often discusses the problem in the light of these considerations at the Saturday conference. During the afternoon session students whose morning patients require consultation in an afternoon specialty clinic attend that clinic with their patients and present them to the appropriate consultant. This added flexibility in the assignment of students promotes even further their continuity of experience and the prompt effective care of the patient. The remaining students may sit in with their colleagues who are meeting the afternoon instructors in medicine and participate in the discussion.

LIAISON WITH THE COMMUNITY AND CONTINUITY OF CARE

In the case of 6 of the 77 Oklahoma counties that refer patients to the University Hospitals outpatient department, special arrangements are made for continuity of care. The six counties were selected on the basis of the adequacy of their public health facilities, and the Commonwealth Fund assumed part of the cost of organizing this service and teaching experience. The charts of patients from these counties are specially marked. The problem of each one is rapidly surveyed by a social service worker, who, with the student, plans any necessary social investigation or counseling. The student keeps a special record of his "county" patients, and, when the study is completed, in either the outpatient department or the inpatient service, the responsible student dictates a letter to the referring physician including all pertinent findings and detailed recommendations for follow-up and further therapy. Each letter is checked and signed by the clinic director, who makes sure that such things as necessary social service or visiting nursing recommendations are included and sufficiently clear. He may recommend revisions in the letter, and, if so, he discusses them with the student before the final draft is prepared. With the knowledge and approval of the members of each of the county medical societies involved, a copy of every letter goes to the county health officer, who takes appropriate action to see that the patient gets back to his physician at the proper time and gets the services called for or the necessary drugs or equipment. After a patient is referred back to his community, an open channel is maintained to the office of the director of the outpatient clinics, who refers inquiries back to the responsible student. This county liaison program has resulted in a reduction in the number of unnecessary recurrences of such conditions as congestive heart failure and diabetic acidosis and has taught the students how to write letters to other physicians. The program is described in greater detail in another publication.[1] Since its inception, students have frequently, and on their own initiative, undertaken to write letters to referring physicians whose patients have come from other than the six counties included in the project.

Currently, the experience of the students with their patients from the six counties has been intensified in the following way: Each day at 2 p. m. the director of the program meets in his office with the social service worker and students who have seen patients from one of the six counties that morning. The problem of each patient is discussed individually, plans are formulated, and a definite date is set for letter writing. These sessions enable the student to grasp more readily the role of the social worker, encourage him to think out every aspect of his patient's difficulty, enable him to visualize possibilities for improved health, and, in general, promote in him a concept of comprehensive medicine.

PREVENTIVE ATTITUDES IN PRACTICE

It is recognized that preventive medicine is not necessarily a group or community undertaking but can be practiced in individual contacts with patients. Accordingly, emphasis in teaching was laid on anticipation of future problems for the patient or his family and on attempts to forestall them. The incidental discovery of mitral stenosis in a young man, for example, led to the prescription of prophylactic chemotherapy and a check of other members of the family. In another patient the recital of the family history yielded an account of her husband's indolent leg ulcer. His spleen was ultimately removed for splenic anemia. In numerous other patients early carcinoma of the cervix uteri was discovered because of the routine practice of examining stained smears of cervical secretions. The students have also become alert to unhealthy psychological pressures in the families of their patients and attempt to mitigate them through discussion and study. This type of activity directed toward the cultivation of a preventive attitude in medical practice is greatly facilitated by the rearrangements in clinic administration and the "longitudinal curriculum." The patient is encouraged to feel that he has his own "doctor" whom he can count on seeing at each visit and who is concerned with his problems in particular. Through such continuity of experience a reassuring communication can develop between patient and physician that probably has intrinsic therapeutic value and that certainly makes for more effective medical care.

A limited number of especially appropriate patients are visited in the home by the fourth year student under the supervision of a full-time faculty member who shares an appointment in medicine and preventive medicine. In this connection, it should be mentioned that The Kellogg Foundation supported the entire preventive aspect of the program.

The experience of the student in the more strictly public health aspects of preventive medicine is broadened during a three day segment of his time devoted to preceptorship in the community, where he is assigned to one of the county health departments to observe, share in a part of the work, and familiarize himself with the objectives, methods, and facilities of such units.

COOPERATION AMONG DEPARTMENTS

It is doubtful that the program described here could have been begun or continued without the freely given cooperation of all of the teaching departments concerned. They all recognized and sought the major aims of simplifying and rendering more effective the care of the patient and of introducing more breadth and continuity in teaching so that the student would have the best opportunity to develop a sense of responsibility for his patient and a facility for communicating with his colleagues. In the pursuit of these aims the traditional competition for "cases" and the tendency to shift onerous responsibilities to other clinics were lessened.

---

[1] Colmore, J. P.: Comprehensive Medical Care Program at the University of Oklahoma School of Medicine and the University Hospitals: A Preliminary Report, South. M. J. 47:897 (Sept.) 1954.

SUMMARY

A program for conducting patient care and undergraduate teaching in an outpatient department has been in smooth operation at the University Hospitals of the University of Oklahoma for more than two years. It is based on a reorganization that allows for broader responsibilities in the medicine clinic and reduced emphasis on medical specialty clinics. It includes a major change in the teaching curriculum that allows a student to follow all of his patients in the outpatient department throughout the year regardless of the clinic to which they are assigned. The aims of the program are to provide more prompt and effective care for patients and to establish more continuity of clinical experience for the students. One result of this program is to arouse in the students a sense of responsibility for their patients with regard to the prevention of illness as well as its treatment.

800 N. E. 13th St. (4) (Dr. Wolf).

CHANGING ROLE OF NEUROLOGICAL SURGERY IN MEDICINE

CHAIRMAN'S ADDRESS

A. Earl Walker, M.D., Baltimore

It is now some 35 years since Dr. W. J. Mayo, after hearing a discussion by Harvey Cushing before the American College of Surgeons, declared, "Gentlemen, today we have witnessed the birth of a new specialty—neurological surgery." This energetic offspring, by its amazing and glamorous development, attracted the attention of both the profession and the laity. This was not always an admiring attention, for at times neurology regarded its progeny as some Frankensteinian monster that threatened to devour its parent. But as the specialty grew, guided by the sharp counsels of surgery and the cautious admonitions of neurology, it was evident that the maturing issue was moulded after neither of its parents. Although steeped in the traditions and the training of a surgeon, the adolescent sought, as a disciple of neurology, all that might aid him in his endeavors yet spurned to put on its austere mantle. The advent of war, that training school of surgery, undoubtedly matured the young specialty, and it passed from its glamorous adolescence to a serious adulthood. Perhaps the first sign of this maturation came with the formation of the American Board of Neurological Surgery, neither a subdivision of the American Board of Surgery nor of the American Board of Psychiatry and Neurology but an autonomous board of the medical specialties. This organization not only served to improve the standards of practice but focused attention on an adequate balanced training for the candidate in neurological surgery.

The real proof of maturity came with the changing viewpoint of the physician toward the neurosurgeon. Not many years ago, the neurosurgeon received most of his patients from the neurologist; general practitioners rarely, and then only with a fatalistic resignation, referred their patients to the brain surgeon. Today, with the exception of a few specialists practicing in clinics and university centers, neurosurgeons receive almost 90% of their patients by direct referral from internists or general practitioners. Not more than 10%, according to a spot survey I recently made, have consulted or been seen by a neurologist. It is then evident that neurological surgery today is regarded not as a subdivision of surgery or the handmaiden of neurology but as an independent specialty in medicine. To acquire this status, neurosurgery had to demonstrate its ability to surgically treat disease of the nervous system with a permissible and comparatively low mortality. This was accomplished by the development of better diagnostic procedures and improved surgical techniques, including anesthesia.

ADVANCES IN NEUROSURGERY

In the early years of neurosurgery, one of the surgeon's greatest discouragements came from his inability to locate accurately lesions within the central nervous system. In those days, in spite of careful neurological examinations, a third of the operations were explorations with normal findings. It was not until ventriculography and myelography were introduced that an accurate means for determining the location of cerebral and spinal cord lesions was available. In recent years angiography has replaced ventriculography in many clinics for the location of cerebral lesions. By this procedure, not only the location but in about 40% of the patients a pathological diagnosis of the lesion can be determined preoperatively. Thus, the surgeon not only can plan the site of his operative approach but, knowing the source of the vascular supply of the lesion, can devise means to avoid undue blood loss. Electroencephalography, a simple, harmless procedure carried out in a few minutes, has helped the neurological surgeon not only in the location of cerebral lesions but in the diagnosis of the epilepsies. Radioactive techniques without pain or risk

---

From the Division of Neurological Surgery, the Johns Hopkins University School of Medicine.

Read before the Section on Nervous and Mental Diseases at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 24, 1954.

until the problem is either solved or dealt with adequately. Each student keeps his own appointment book, arranging whenever possible for his patients' visits to coincide with his own schedule. He tries to space the visits of the patient whom he is following to span the periods when he is out of the clinic on holiday, obstetrics, or preceptorship. He assumes responsibility for inquiry into the reasons for broken appointments, considers their pertinence to the illness, and often discusses the problem in the light of these considerations at the Saturday conference. During the afternoon session students whose morning patients require consultation in an afternoon specialty clinic attend that clinic with their patients and present them to the appropriate consultant. This added flexibility in the assignment of students promotes even further their continuity of experience and the prompt effective care of the patient. The remaining students may sit in with their colleagues who are meeting the afternoon instructors in medicine and participate in the discussion.

LIAISON WITH THE COMMUNITY AND CONTINUITY OF CARE

In the case of 6 of the 77 Oklahoma counties that refer patients to the University Hospitals outpatient department, special arrangements are made for continuity of care. The six counties were selected on the basis of the adequacy of their public health facilities, and the Commonwealth Fund assumed part of the cost of organizing this service and teaching experience. The charts of patients from these counties are specially marked. The problem of each one is rapidly surveyed by a social service worker, who, with the student, plans any necessary social investigation or counseling. The student keeps a special record of his "county" patients, and, when the study is completed, in either the outpatient department or the inpatient service, the responsible student dictates a letter to the referring physician including all pertinent findings and detailed recommendations for follow-up and further therapy. Each letter is checked and signed by the clinic director, who makes sure that such things as necessary social service or visiting nursing recommendations are included and sufficiently clear. He may recommend revisions in the letter, and, if so, he discusses them with the student before the final draft is prepared. With the knowledge and approval of the members of each of the county medical societies involved, a copy of every letter goes to the county health officer, who takes appropriate action to see that the patient gets back to his physician at the proper time and gets the services called for or the necessary drugs or equipment. After a patient is referred back to his community, an open channel is maintained to the office of the director of the outpatient clinics, who refers inquiries back to the responsible student. This county liaison program has resulted in a reduction in the number of unnecessary recurrences of such conditions as congestive heart failure and diabetic acidosis and has taught the students how to write letters to other physicians. The program is described in greater detail in another publication.[1] Since its inception, students have frequently, and on their own initiative, undertaken to write letters to referring physicians whose patients have come from other than the six counties included in the project.

Currently, the experience of the students with their patients from the six counties has been intensified in the following way: Each day at 2 p. m. the director of the program meets in his office with the social service worker and students who have seen patients from one of the six counties that morning. The problem of each patient is discussed individually, plans are formulated, and a definite date is set for letter writing. These sessions enable the student to grasp more readily the role of the social worker, encourage him to think out every aspect of his patient's difficulty, enable him to visualize possibilities for improved health, and, in general, promote in him a concept of comprehensive medicine.

PREVENTIVE ATTITUDES IN PRACTICE

It is recognized that preventive medicine is not necessarily a group or community undertaking but can be practiced in individual contacts with patients. Accordingly, emphasis in teaching was laid on anticipation of future problems for the patient or his family and on attempts to forestall them. The incidental discovery of mitral stenosis in a young man, for example, led to the prescription of prophylactic chemotherapy and a check of other members of the family. In another patient the recital of the family history yielded an account of her husband's indolent leg ulcer. His spleen was ultimately removed for splenic anemia. In numerous other patients early carcinoma of the cervix uteri was discovered because of the routine practice of examining stained smears of cervical secretions. The students have also become alert to unhealthy psychological pressures in the families of their patients and attempt to mitigate them through discussion and study. This type of activity directed toward the cultivation of a preventive attitude in medical practice is greatly facilitated by the rearrangements in clinic administration and the "longitudinal curriculum." The patient is encouraged to feel that he has his own "doctor" whom he can count on seeing at each visit and who is concerned with his problems in particular. Through such continuity of experience a reassuring communication can develop between patient and physician that probably has intrinsic therapeutic value and that certainly makes for more effective medical care.

A limited number of especially appropriate patients are visited in the home by the fourth year student under the supervision of a full-time faculty member who shares an appointment in medicine and preventive medicine. In this connection, it should be mentioned that The Kellogg Foundation supported the entire preventive aspect of the program.

The experience of the student in the more strictly public health aspects of preventive medicine is broadened during a three day segment of his time devoted to preceptorship in the community, where he is assigned to one of the county health departments to observe, share in a part of the work, and familiarize himself with the objectives, methods, and facilities of such units.

COOPERATION AMONG DEPARTMENTS

It is doubtful that the program described here could have been begun or continued without the freely given ticing two to three years, even in small cities, have sought an associate to help them in their busy practice; in not a few instances the associate desired was a neurologist. Yet their dispersion to small communities has made it difficult for these younger neurosurgeons to meet with their colleagues to discuss mutual interests and problems. The annual meetings of five national societies of neurological surgery serve to resolve this problem. The most recently formed, the Congress of Neurological Surgeons, has admirably dedicated itself to helping the young neurosurgeon keep acquainted with the leaders and advances of the specialty. This growth of the specialty of neurological surgery came as the result of expanding the therapeutic frontiers and not at the expense of one of its associated disciplines. In fact, psychiatry, neurology and their basic sciences have benefited by the nonspecific activation of the field that followed the advances of neurosurgery. The fact that there are now more opportunities and demands than ever before for neurologists and psychiatrists would negate the pessimism of a few years ago regarding the future of at least one of these specialties.

---

[1] Colmore, J. P.: Comprehensive Medical Care Program at the University of Oklahoma School of Medicine and the University Hospitals: A Preliminary Report, South. M. J. 47:897 (Sept.) 1954.

CHANGING RESPONSIBILITIES OF THE SPECIALTY

In enlarging the scope of his field to a more elective type of surgery, the neurosurgeon must know, in order to evaluate his results, the natural life history of the disease and the course of the disease as modified by a surgical procedure. Unfortunately the first is usually inadequately or incompletely known, and the second can only be obtained by a long-term follow-up. An illustration may suffice. The cerebral vascular malformations that have been so boldly excised in the past few years appear to have a rather benign life history. On the basis of an analysis of some 80 cases, only 20% of the malformations are associated with rupture, and the majority, but not all, are associated with convulsions. Many patients harboring such a lesion enjoy a normal span of life, punctuated perhaps by occasional epileptic attacks. The removal of these angiomas, especially if they are deep-seated in the motor area, may precipitate a hemiplegia without entirely eliminating the danger of rupture or of epileptic seizures. Surely further information about the life histories of these lesions, with and without operation, would be of great importance to the neurosurgeon in assessing the value of their extirpation. The importance that Cushing attached to a knowledge of a life history of the brain tumors is well explained in his classical description of the meningiomas.

Such longitudinal studies are even more necessary in non-neoplastic surgery of the nervous system. The long-term studies of peripheral nerve and head injuries now in progress have stimulated modifications in the treatment of these conditions. Although we have some data on long-term follow-ups on brain tumors, trigeminal neurotomy, and chordotomy, many of our neurosurgical procedures might be profitably reviewed in this manner, for some physicians do not seem to be favorably impressed by the end-results. Specifically one might mention the present surgical treatment of aneurysms. Perhaps this point might be illustrated by citing three cases of large aneurysm of the first part of the middle cerebral artery. All three patients were only slightly disabled at the time they were initially seen. The first patient succumbed after removal of the lesion, and the second was in a vegetative state for weeks after operation at which the aneurysm was removed. After months she recovered sufficiently to walk with the aid of two persons. The third patient was advised against an operation and is carrying on his business two years later. To which of these was the surgeon the good physician? Neurosurgery has now been practiced long enough for the neurosurgeon to evaluate critically his end-results and assess his surgical triumphs as therapeutic successes or technical heroics. In his constant efforts to enlarge the scope of his specialty, the neurosurgeon incurs another responsibility. Because of the tremendous current interest of the general public in all therapeutic measures, especially those of a surgical nature pertaining to the chronic nervous disease, great care should be used in presenting research in progress and experimental therapeutic results to the uncritical public. Chronic sufferers so eagerly grasp at the slightest hope, make unwarranted sacrifices to receive the benefit of the new operation, and, finally realizing that they have not been helped, become discouraged and turn bitterly against the medical profession. Before a new treatment is presented to the general public, something of its indications and limitations should be known, for once Pandora's box is opened there is no means of controlling the winds.

601 N. Broadway (5).

Liver Therapy in Anemia.—It cannot be too strongly emphasized that the only anemias for which liver is valuable are the megaloblastic anemias. Its use for normoblastic iron deficiency anemias has no pharmacological sanction. . . . The position today is that pernicious anemia in relapse can be effectively treated by crude or refined liver extracts or by vitamin B_{12}. It is believed that liver acts in this disease only by virtue of its vitamin B_{12} content. Therefore liver is no longer necessary for pernicious anemia. The non-Addisonian megaloblastic anemias are treated effectively by crude liver extracts or by folic acid, but not by refined liver extracts or by vitamin B_{12}. There is reason to believe that the crude liver extracts act solely because of their folic acid content. (The action of vitamin B_{12} is to help maturation of red cells. The action of folic acid is not properly understood.) It would appear, therefore, that with vitamin B_{12} and folic acid available we no longer need liver extracts. The first can be used for pernicious anemias and the second for the non-Addisonian megaloblastic anemias. Inasmuch as these two substances can provide better results in their appropriate therapeutic fields than crude or refined liver extracts, it is not to be wondered that pharmacologists consider that liver extract will soon be replaced. One can almost with certainty dispense with the refined extracts. There is a lingering fear that there may still be some unknown antianemic substance of importance in crude liver awaiting discovery. For this reason we hesitate to give firm advice about excluding crude liver extracts from our pharmacopeias at this juncture. It is interesting that after vitamin B_{12} was discovered, an assay of existing liver extracts for vitamin B_{12} gave surprisingly low figures in some instances. Manufacturers are now adding vitamin B_{12} to their liver extracts to make sure of their therapeutic potency. In some cases they are adding more than is needed. It is generally conceded that 50 micrograms per fortnight would be a maximum maintenance dose.—A. J. Collins, M.D., Certain Aspects of Modern Drug Therapy, *Medical Journal of Australia,* July 3, 1954.

TABLE 1.—*Results of Blood Transfusions Given Patient Reported on*

No.	Date	Result
1	Sept. 30, 1953	No reaction; hemoglobin, 8 gm. per 100 cc.
2	Oct. 1, 1953	Reaction with fever and vomiting; passed frank blood from colostomy; urine blood tinged; bilirubin, 1.9 mg. per 100 cc.
3	Oct. 1, 1953	No reaction; hemoglobin, 10 gm. per 100 cc.
4	Oct. 2, 1953	No reaction; no frank bleeding
5	Oct. 3, 1953	No reaction; no frank bleeding
6	Oct. 3, 1953	No reaction; hemoglobin, 11 gm. per 100 cc.
7	Oct. 4, 1953	No reaction; hemoglobin, 11 gm. per 100 cc.
8	Oct. 5, 1953	Severe reaction; temperature to 102.4 F; passed frank blood from colostomy; subsequently bilirubin rose to 5.7 mg. and urea nitrogen to 40 mg. per 100 cc.; urine showing urobilinogen positive in 1:120 dilution and bile 4+
9	Oct. 10, 1953	No reaction
10	Oct. 10, 1953	Washed red cells, 750 cc.; discontinued because of severe reaction; temperature 103.8 F; currant jelly stools
11	Oct. 13, 1953	No reaction; hemoglobin, 7 gm. per 100 cc.
12	Oct. 13, 1953	No reaction
13	Oct. 13, 1953	Washed cells, 250 cc.; severe reaction; temperature 104 F; back pain; currant jelly stools; hemoglobin, 4.8 gm. per 100 cc.
14 15	Oct. 16, 1953	Administered during operation; temperature to 104 F postoperatively
16	Oct. 17, 1953	No reaction; hemoglobin, 8.5 gm. per 100 cc.
17	Oct. 21, 1953	Severe reaction one hour after transfusion; temperature 103 F; bleeding from colostomy
18	Oct. 22, 1953	Compatible by Coombs' technique; no reaction
19	Oct. 24, 1953	Compatible by Coombs' technique; no reaction
20	Nov. 5, 1953	Compatible by Coombs' technique; mild pyrogenic reaction; hemoglobin, 7 gm. per 100 cc.

TABLE 2.—*Results of Indirect Antiglobulin Test of Patient's Serum Antibodies*

Cells	Patient's Serum	S	s	M	N	P	Rh	Lu	K	k	Le^a	Le^b	Fy^a	Jk^a	Jk^b
1	+	+	+	0	+	0	R_1R_2	0	0	+	0	+	0	+	+
2	+	+	+	+	0	+	R_1R_1	0	0	+	0	+	0	0	+
3	0	0	+	0	+	+	R_2R_2	0	0	+	0	0	0	+	+
4	+	+	+	+	0	+	R_0r	0	0	+	0	+	0	+	+
5	0	0	+	0	+	+	r'r	0	0	+	0	+	0	+	+
6	+	+	+	+	+	+	r''r	0	0	+	+	0	+	+	+
7	0	0	+	+	0	0	rr	0	+	+	0	+	0	0	+
8	+	+	0	+	+	+	rr	+	0	+	+	0	+	+	0

The specimen of the patient's serum that we studied did not agglutinate S cells, either untreated or trypsinized in saline or serum albumin solutions. For this reason, the current cross-match test failed. The antibody, however, was capable of sensitizing both untreated and trypsinized SS and Ss cells to the Coombs test at temperatures of 18 C and 37 C in both saline and serum albumin solutions.

The best reaction (4+ clumps) and highest titers (eight) were obtained by sensitizing to the Coombs test trypsinized cells suspended in saline solution at 18 C or 37 C for two hours. Somewhat weaker reactions were obtained by sensitizing to the Coombs test untreated cells suspended in saline solution at 18 C or 37 C for two hours. No difference in the reaction to SS or Ss cells was detected.

In addition, the patient's serum contained an agglutinin that agglutinated (titer 16) all cells at 4 C. By absorbing twice with one-half volumes of packed washed group O ss cells at refrigerator temperature, it was possible to completely remove this nonspecific cold agglutinin. Examination of the anti-S in the absorbed serum revealed that its activity seemed slightly enhanced. It specifically sensitized S-positive cells to the Coombs test at 4 C, 18 C, and 37 C, and, showing a dosage effect, it discriminated between SS and Ss cells at 37 C. It did not, however, agglutinate cells in saline or serum albumin solutions or by the standard cross-matching test. At all temperatures the use of trypsinized cells followed by the indirect antiglobulin test produced the best reactions.

Second Hospital Course.—Three months later the patient was readmitted to the hospital for abdominal cramps and vomiting. She had passed nothing from her colostomy in 24 to 36 hours. The small intestine was shown by roentgenogram to be distended. An exploratory celiotomy was performed, and adhesions were freed. She became hypotensive, and edema returned and increased. The course was progressively downward, and the patient died three days after being admitted to the hospital. Examination of specimens of the patient's blood during this second admission failed to reveal the presence of anti-S.

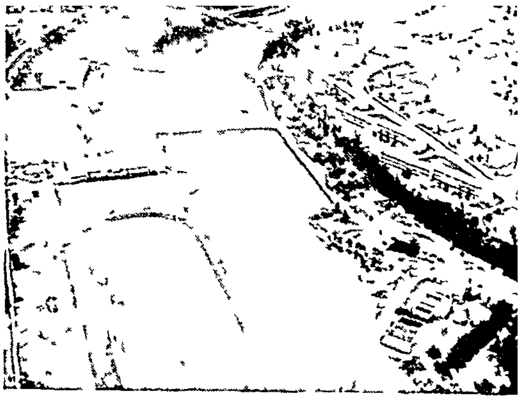
Autopsy Findings.—The body of the patient, a well-developed and well-nourished white woman with gray hair and icteric tint of the skin, was seen at autopsy. Moderate pitting edema of the skin of the feet and ankles was observed. An area of hemorrhage, 6 cm. in diameter, was evident in the abdominal incision. The peritoneal cavity contained 800 cc. of bloody fluid. Multiple fibrous adhesions were present over the peritoneum. A thick band was present on the left side, and a loop of small intestine was fixed by it, causing bluish-black discoloration of this loop. The pleural spaces were obliterated by fibrous adhesions. The pericardial sac contained 400 cc. of clear fluid. The heart weighed 660 gm. The mitral valve was of the fishmouth type. The tricuspid valve revealed moderate stenosis, and a moderate degree of thickening was seen in the aortic valve. An old myocardial scar and recent infarction of the myocardium were evident. General passive hyperemia and edema of the lungs were noted. The spleen weighed 240 gm.; old infarction scars were present. The kidneys had irregular deep scars present. The liver was enlarged, with wrinkling of the capsule and hyperemic large scars characteristic of toxic cirrhosis. The stomach revealed several acute erosions. The upper ileum revealed a gangrenous loop over 80 cm. in length. The colon revealed changes consisting of fibrosis in the wall and ulceration of the mucosa, with general hyperemia as seen in nonspecific ulcerative colitis.

SUMMARY

Anti-S was identified in the serum of an anemic patient who required multiple blood transfusions. This antibody caused transfusion reactions associated with rigor, fever, hemolysis, and increased bleeding. The incompatibility was not detected by the current cross-matching procedures but only by the indirect antiglobulin test (Coombs' test). Transfusion was successfully done when the donor's blood was selected by means of the Coombs cross-match.

300 W. 43rd St. (36) (Dr. Cahan).

Ownership of Drugstores.—It is unethical for a physician to participate in the ownership of a drugstore in his medical practice area unless adequate drugstore facilities are otherwise unavailable. This inadequacy must be confirmed by his component medical society. The same principle applies to physicians who dispense drugs or appliances. In both instances, the practice is unethical if secrecy and coercion are employed or if financial interest is placed above the quality of medical care. On the other hand, sometimes it may be advisable and even necessary for physicians to provide certain appliances or remedies without profit which patients cannot procure from other sources.—Principles of Medical Ethics of the American Medical Association, chapter 1, section 8, June, 1954.



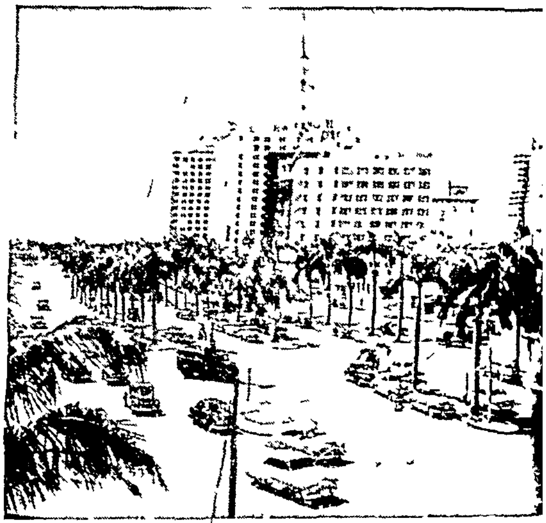
Aerial view of the campus of the University of Mia

Miami's skyline across Biscayne Bay in the evening.

GREATER MIAMI

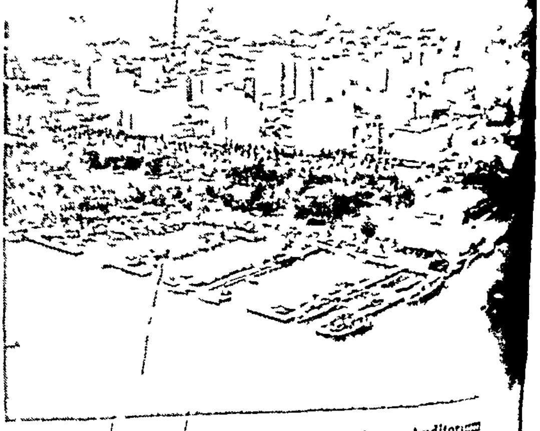
From the extreme southeastern shore of the United States only a few hours flying distance from any point in the nation, beautiful greater Miami extends a cordial semitropical welcome to the doctors and their guests who will attend the Clinical Meeting of the American Medical Association, Nov. 29-Dec. 3. No difficulty should be encountered in arranging for comfortable accommodations in this delightful climate, as the Florida Hotel Commission lists 541 hotels with 40,613 rooms. Getting there should be easily accomplished also, as 57 air lines operate in and out of International Airport, and two railroad systems, two bus systems, and three highways lead to Miami. One highway follows the east coast, one goes through the central part of the state past Lake Okeechobee, and the third goes directly across the Everglades from the Florida west coast. According to the *Centaur* of Alpha Kappa Kappa, in addition to the hotels mentioned, there are 202 motor courts, and other housing facilities, giving a total of more than 200,000 registered rooms for visitors As to eating places, the Florida Hotel Commission claims Miami can feed 156,597 persons at one time.

The average summer temperature is 79.2 degrees, and the average winter temperature 70.1 degrees. Weather bureau records show that in six years temperatures have not exceeded 90 degrees and that the summers average only six days of 90 degrees temperature. Thus, Miami summers are cooler than those in some northern cities. From the ocean come the Trade Winds wafting steady breezes over the many miles of sandy beaches. It is said there has never been a single case of heat prostration in the city's history.



Royal palm-lined Biscayne Boulevard, one of Miami's most beautiful streets.

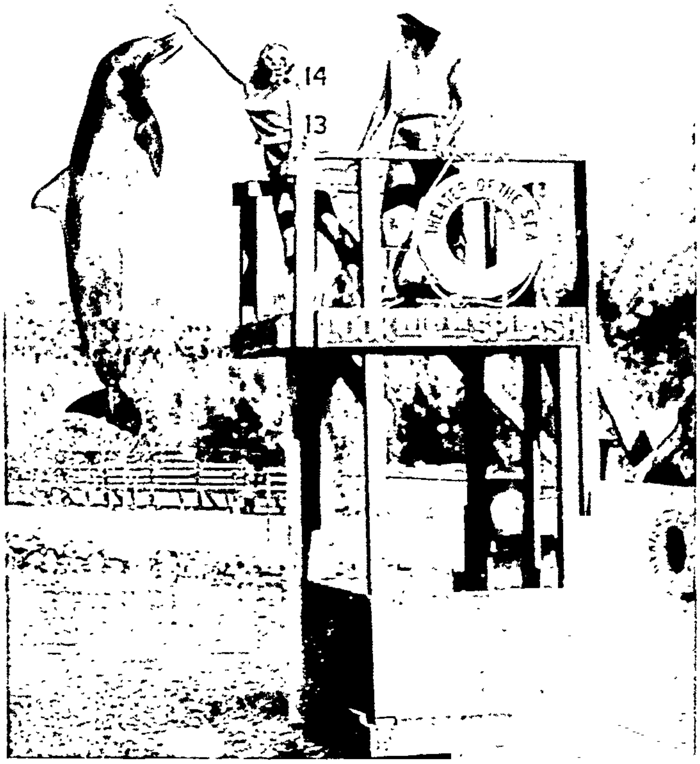
Villa Vizcaya, formerly the Deering estate, now open to the public.



Downtown Miami and Bayshore Auditorium (right foreground), where the Health Fair will be held

Above: Miami Country Club.

Below: Matheson Hammock Park Beach.

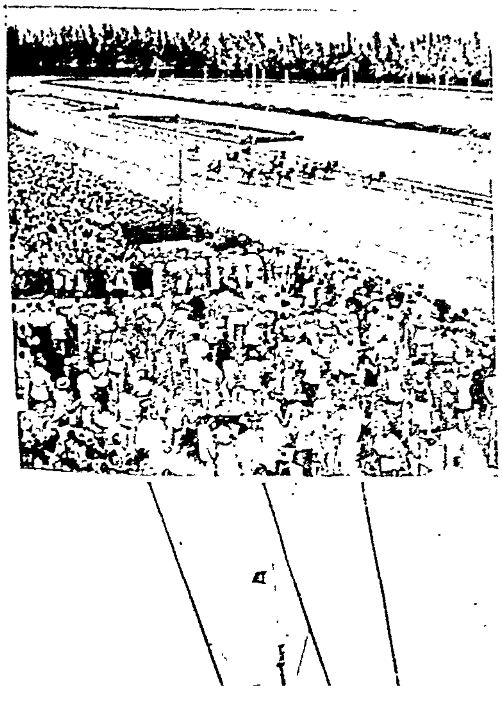


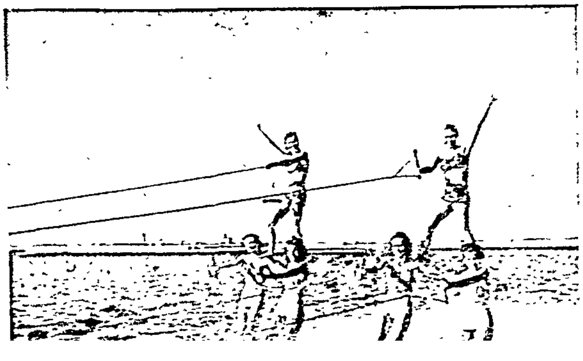
High-jumping porpoise at the Theater-of-the-Sea.

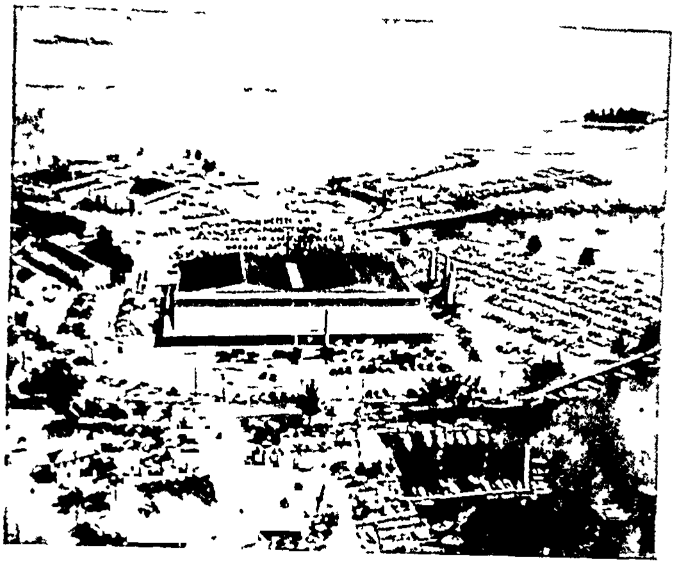
Recreation Facilities

Only 58 years ago, Miami was a fishing settlement with two nondescript buildings on the banks of Biscayne Bay. Today it has 650,000 year-round residents and a tourist population of 3,500,000 persons a year, and the metropolitan area is preparing to handle an influx of 10 million persons a year by 1975. Already Miami has more than its share of parks, probably the best known being Everglades National Park, the only subtropical park in the United States. Motor boating and yachting are popular on the 370 square miles of sheltered water in Biscayne Bay, where visitors may rent vessels and fish to their heart's content. Miami offers more than 600 varieties of fish. The fresh water angler has a wide choice of lakes, rivers, and streams teeming with bass, while the more venturesome fisherman can go to the nearby Gulf Stream for tuna, swordfish, and other varieties.

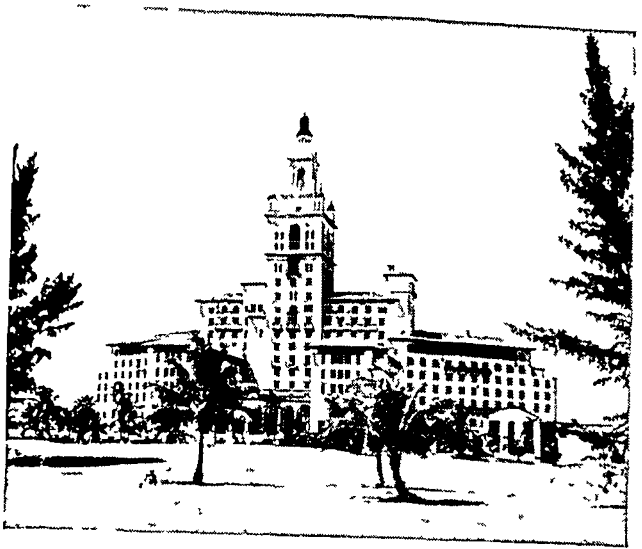
Below: Hialeah, one of Miami's race tracks, and Game fishing off Miami.



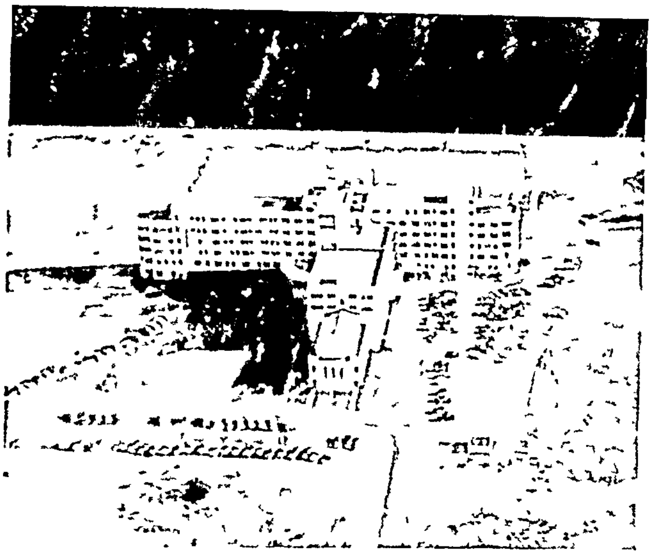




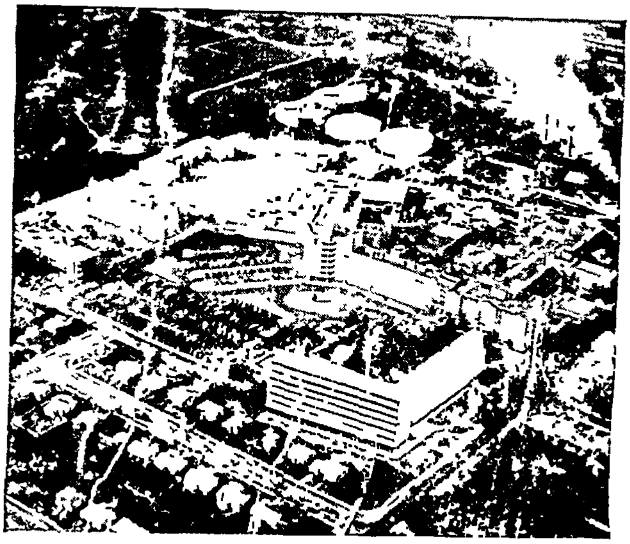
Dinner Key exposition building, where A. M. A. meeting will be held.



Veterans' hospital, Coral Gables, formerly the Biltmore Hotel.



Mercy Hospital.



Jackson Memorial Hospital, with medical school superimposed (bottom right).

The University and the Medical School

The University of Miami, chartered in 1925 as a nonprofit, nonsectarian, and coeducational institution of higher learning, has schools of law, music, engineering, arts and sciences, business administration, a graduate school, and now a school of medicine, which is already operating and for which new buildings are under construction. The new medical school, which opened its doors in September, 1952, at present is housed in a fully equipped building on the Veterans Administration Hospital grounds in Coral Gables. Two units adjacent to the great Jackson Memorial Hospital will comprise the medical school structures, one being an outpatient clinic and the other a medical science building to contain the laboratories, classrooms, and administrative offices. The teaching facilities in these new buildings will accommodate eventually 300 medical students. In planning the medical school a committee during the summer of 1951 made a transcontinental trip to study the facilities and architecture of 12 established schools. The committee comprised Jay F. W. Pearson, president of the University of Miami; C. C. Hillman, director of the Jackson Memorial Hospital; E. Morton Miller, dean of the university's College of Arts and Sciences; and John L. Skinner of the firm of Steward and Skinner, which prepared the plans for the science building.

Jackson Memorial Hospital

Although established as a six-bed hospital by public subscription in 1910, Jackson Memorial Hospital was taken over by the city of Miami two years later. At its present location in Coral Gables, this hospital has rapidly grown to its present capacity of 941 beds, with 35 buildings and 1,700 employees. After its facilities were transferred from control by the city of Miami to Dade County, a plan for expansion was developed calling for the expenditure of 10 million dollars. For many years, this hospital has been administered under the direction of Dr. Charles C. Hillman, who retired from the Medical Corps after World War II after many years of Army service.

Other Hospitals

In Dade County the hospital beds number about 3,000, but the number grows constantly to meet the demands of the ever-increasing population. In addition to the Jackson Memorial Hospital are the Doctors' Hospital at Coral Gables (102 beds); Mercy Hospital (205 beds); St. Francis Hospital (200 beds); Variety Children's Hospital (117 beds); Dade County Hospital (210 beds); Mount Sinai Hospital (306 beds); Veterans Administration Hospital (423 beds); National Children's Cardiac Hospital (65 beds); Victoria Hospital (80 beds); Edgewater Hospital (45 beds); and Coral Gables Hospital (45 beds). The facilities already present will continue to develop into a great medical center for the care of all classes of patients in Dade County.

THE CLINICAL MEETING

AMERICAN MEDICAL ASSOCIATION

Miami, Fla., Nov. 29—Dec. 2, 1954

OFFICIAL CALL

TO THE OFFICERS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The clinical meeting of the American Medical Association will be held in Miami, Fla., Nov. 29-Dec. 2, 1954.

The House of Delegates will convene at 10 a. m., Monday, Nov. 29, in the Flagler Ballroom of the McAllister Hotel. In the House the representation of the various constituent associations for the clinical meeting in 1954 is as follows:

Alabama	2
Arizona	1
Arkansas	2
California	13
Colorado	2
Connecticut	3
Delaware	1
District of Columbia	2
Florida	3
Georgia	3
Idaho	1
Illinois	10
Indiana	4
Iowa	3
Kansas	2
Kentucky	2
Louisiana	2
Maine	1
Maryland	2
Massachusetts	6
Michigan	6
Minnesota	4
Mississippi	2
Missouri	4
Montana	1
Nebraska	2
Nevada	1
New Hampshire	1
New Jersey	5
New Mexico	1
New York	17
North Carolina	3
North Dakota	1
Ohio	7
Oklahoma	2
Oregon	2
Pennsylvania	11
Rhode Island	1
South Carolina	2
South Dakota	1
Tennessee	3
Texas	6
Utah	1
Vermont	1
Virginia	2
Washington	3
West Virginia	2
Wisconsin	3
Wyoming	1
Alaska	1
Hawaii	1
Isthmian Canal Zone	1
Puerto Rico	1

The scientific sections of the American Medical Association, the Medical Corps of the Army, the Medical Corps of the Navy, the Medical Corps of the Air Force, the Public Health Service, and the Veterans Administration are entitled to one delegate each.

The scientific meetings and the scientific and technical exhibits will be held in Dinner Key Auditorium.

The Opening General Session will start at 10:25 a. m., Monday, Nov. 29.

The Scientific Program will open Monday, Nov. 29, starting at 1:00 p. m., and will continue throughout the afternoon of that day. The program will continue on Tuesday and Wednesday mornings and afternoons, Nov. 30 and Dec. 1, and on Thursday morning, Dec. 2, closing at 12 noon.

The Registration Bureau, which will be located in the Dinner Key Auditorium, will be open from 8:30 a. m. until 5:30 p. m., Monday, Tuesday, and Wednesday, Nov. 29 to Dec. 1, and from 8:30 a. m. to 12:00 noon, Thursday, Dec. 2.

WALTER B. MARTIN, President.
JAMES R. REULING, Speaker, House of Delegates.
GEORGE F. LULL, Secretary.

OFFICERS OF THE AMERICAN MEDICAL ASSOCIATION, 1954-1955

PRESIDENT—Walter B. Martin, Norfolk, Va.

PRESIDENT-ELECT—Elmer Hess, Erie, Pa.

VICE PRESIDENT—Clark Bailey, Harlan, Ky.

SECRETARY AND GENERAL MANAGER—George F. Lull, Chicago.

ASST. SECRETARY—Ernest B. Howard, Chicago.

TREASURER—J. J. Moore, Chicago.

SPEAKER, HOUSE OF DELEGATES—James R. Reuling, Bayside, N. Y.

VICE SPEAKER, HOUSE OF DELEGATES—E. Vincent Askey, Los Angeles.

EDITOR—Austin Smith, Chicago.

BUSINESS MANAGER—Thomas R. Gardiner, Chicago.

BOARD OF TRUSTEES—L. W. Larson, Bismarck, N. D., 1955; T. P. Murdock, Meriden, Conn., 1955; J. P. Price, Florence, S. C., 1956; D. H. Murray, Chairman, Napa, Calif., 1957; James R. McVay, Kansas City, Mo., 1957; E. S. Hamilton, Kankakee, Ill., 1958; G. Gundersen, LaCrosse, Wis., 1958; D. B. Allman, Atlantic City, N. J., 1959; F. J. L. Blasingame, Wharton, Texas, 1959; the President and the President-Elect.

STANDING COMMITTEES OF THE HOUSE OF DELEGATES

JUDICIAL COUNCIL—L. A. Buie, Rochester, Minn., 1955; W. F. Donaldson, Bakerstown, Pa., 1956; H. L. Pearson Jr., Chairman, Miami, Fla., 1957; G. A. Woodhouse, Pleasant Hill, Ohio, 1958; J. M. Hutcheson, Richmond, Va., 1959; G. F. Lull, Secretary, Chicago.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS—Harvey B. Stone, Baltimore, 1955; J. M. Faulkner, Boston, 1955; Guy A. Caldwell, New Orleans, 1956; John W. Cline, San Francisco, 1956; F. D. Murphy, Lawrence, Kan., 1957; H. G. Weiskotten, Chairman, Skaneateles, N. Y., 1957; Victor Johnson, Rochester, Minn., 1958; L. S. McKittrick, Brookline, Mass., 1958; C. T. Stone Sr., Galveston, Texas, 1959; W. A. Bunten, Cheyenne, Wyo., 1959; Edward L. Turner, Secretary, Chicago.

COUNCIL ON MEDICAL SERVICE—H. B. Mulholland, Charlottesville, Va., 1955; C. E. Wertz, Buffalo, 1956; R. L. Novy, Detroit, 1957; L. M. Orr, Orlando, Fla., 1958; R. B. Homan Jr., El Paso, Texas, 1958; Joseph D. McCarthy, Chairman, Omaha, 1959; E. J. McCormick, Toledo, Ohio; W. B. Martin, Norfolk, Va.; David B. Allman, Atlantic City, N. J.; Mr. Thomas A. Hendricks, Secretary, Chicago.

COUNCIL ON CONSTITUTION AND BYLAWS—B. E. Pickett Sr., Carrizo Springs, Texas, 1955; L. A. Buie, Chairman, Rochester, Minn., 1956; J. Stevenson, Tulsa, Okla., 1957; S. H. Osborn, Hartford, Conn., 1958; F. S. Winslow, Rochester, N. Y., 1959; E. S. Hamilton, Kankakee, Ill.; the President and the Speaker and Vice Speaker of the House of Delegates.

STANDING COMMITTEES OF THE BOARD OF TRUSTEES

COUNCIL ON PHARMACY AND CHEMISTRY—Joseph Stokes Jr., Philadelphia, 1954; Perrin H. Long, Brooklyn, 1954; W. G. Workman, Bethesda, Md., 1954; J. Bordley III, Cooperstown, N. Y., 1954; Carl A. Dragstedt, Chicago, 1955; Isaac Starr, Philadelphia, 1955; Joseph Hayman, Boston, 1955; E. M. K. Geiling, Chicago, 1956; Elmer M. Nelson, Washington, D. C., 1956; Henry K. Beecher, Boston, 1956; Torald Sollmann, Chairman, Cleveland, 1957; James P. Leake, Washington, D. C., 1957; A. C. Curtis, Ann Arbor, Mich., 1957; W. C. Cutting, San Francisco, 1958; O. O. Meyer, Madison, Wis., 1958; M. H. Seevers, Ann Arbor, Mich., 1958; T. McP. Brown, Washington, D. C., 1958; Robert T. Stormont, Secretary, Chicago.

COUNCIL ON SCIENTIFIC ASSEMBLY—S. P. Reimann, Philadelphia; A. McMahon, St. Louis; C. A. Lincke, Carrollton, Ohio; M. E. DeBakey, Houston, Texas; S. P. Newman, Denver; H. R. Viets, Chairman, Boston; C. H. Phifer, Chicago; J. R. McVay, Kansas City, Mo.; L. W. Larson, Bismarck, N. D.; T. G. Hull, Chicago, Secretary.

COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION—F. H. Krusen, Chairman, Rochester, Minn., 1954; Anthony C. Cipollaro, New York, 1954; Felix Butte, Dallas, Texas, 1954; O. Glasser, Cleveland, 1955; Shields Warren, Boston, 1955; Derrick Vail, Chicago, 1955; Frank R. Ober, Boston, 1956; D. M. Lierle, Iowa City, 1956; W. W. Coblentz, Washington, D. C., 1957; George M. Piersol, Philadelphia, 1957; M. A. Bowie, Swarthmore, Pa., 1958; Arthur L. Watkins, Boston, 1958; W. J. Zeiter, Cleveland, 1958; Ralph E. DeForest, Secretary, Chicago.

COUNCIL ON FOODS AND NUTRITION—L. A. Maynard, New York, 1954; Grace Goldsmith, New Orleans, 1954; Charles S. Davidson, Chairman, Boston, 1954; Clement A. Smith, Boston, 1955; C. S. Ladd, Washington, D. C., 1955; Robert Jackson, Columbia, Mo., 1956; George R. Cowgill, New Haven, Conn., 1956; W. H. Griffith, Los Angeles, 1957; William J. Darby, Nashville, Tenn., 1958; C. A. Elvehjem, Madison, Wis., 1958; John B. Youmans, Nashville, Tenn., 1958; James R. Wilson, Secretary, Chicago.

Council on Industrial Health—Warren F. Draper, Washington, D. C., 1954; Henry H. Kessler, Newark, N. J., 1954; Oscar A. Sander, Milwaukee, 1954; Lloyd E. Hamlin, Chicago, 1955; Robert A. Kehoe, Cincinnati, 1955; W. P. Shepard, New York, Chairman, 1956; M. N. Newquist, New York, 1956; James S. Simmons,* Boston, 1957; J. H. Sterner, Rochester, N. Y., 1957; R. T. Johnstone, Los Angeles, 1958; L. C. McGee, Wilmington, Del., 1958; C. F. Shook, Toledo, Ohio, 1958; C. M. Peterson, Secretary, Chicago.

Council on National Defense—Harold S. Diehl, Minneapolis, 1954; Richard L. Meiling, Columbus, Ohio, 1954; A. A. Brindley, Toledo, Ohio, 1955; W. J. Baker, Chicago, 1955; Stafford L. Warren, Los Angeles, 1956; Herbert B. Wright, Cleveland, 1956; James C. Sargent,* Chairman, Milwaukee, 1957; Perrin H. Long, Brooklyn, 1957; Roscoe L. Sensenich, South Bend, Ind., 1958; Harold C. Lueth, Evanston, Ill., 1958; Mr. C. Joseph Stetler, Secretary, Chicago.

Council on Rural Health—C. S. Mundy, Toledo, Ohio, 1954; C. R. Henry, Little Rock, Ark., 1954; F. A. Humphrey, Ft. Collins, Colo., 1955; N. H. Gardner, E. Hampton, Conn., 1955; A. T. Stewart, Lubbock, Texas, 1956; J. F. Doughty,* Tracy, Calif., 1956; W. J. Weese, Ontario, Ore., 1957; W. A. Wright, Williston, N. D., 1957; F. S. Crockett, Chairman, Lafayette, Ind., 1958; G. F. Bond, Bat Cave, N. C., 1958; Mrs. A. Hibbard, Secretary, Chicago.

Committee on Mental Health—L. H. Smith, Philadelphia, 1954; M. Levine, Cincinnati, 1954; F. M. Forster, Washington, D. C., 1955; H. T. Carmichael, Chicago, 1956; M. R. Kaufman, New York, 1957; L. H. Bartemeier, Chairman, Baltimore, 1958; W. H. Baer, Peoria, Ill., 1958; F. J. Gerty, Chicago, 1958; R. J. Plunkett, Secretary, Chicago.

Committee on Legislation—Clark Bailey, Harlan, Ky., 1954; C. L. Palmer, Harrisburg, Pa., 1954; R. B. Chrisman Jr., Miami, Fla., 1955; J. L. Ludwig, Los Angeles, 1955; D. B. Allman, Chairman, Atlantic City, N. J., 1956; M. L. Phelps, Denver, 1956; J. D. McCarthy, Omaha, 1957; J. E. McDonald, Tulsa, Okla., 1957; Harlan English, Danville, Ill., 1958; D. G. Smith, Nashua, N. H., 1958; Mr. C. Joseph Stetler, Secretary, Chicago.

The Secretary, Assistant Secretary and Editor are ex officio members of all Standing Committees

REGISTRATION

The Registration Bureau will be located in the Dinner Key Auditorium. An information bureau will be operated in connection with the Registration Bureau.

Who May Register

Members—Active, Affiliate, Associate, Service, and Honorary—and invited guests may register for attendance at meetings.

Active members in good standing in the American Medical Association are those members of component county medical societies and of constituent state and territorial medical associations whose names are officially reported for enrolment to the Secretary of the American Medical Association by the secretaries of the constituent medical associations and who have paid or who have been exempted from payment of their annual American Medical Association membership dues, which this year are $25, to be paid through their constituent medical associations.

Residents, interns, students, nurses, and technicians will receive cards to fill in. These cards should be presented, at the window indicated, endorsed or with a letter signed by the superintendent of the hospital or the dean of the medical school they attend.

Register Early

The names and Miami addresses of those who register early on Monday, Nov. 29, will be included in the issue of the *Daily Bulletin* appearing the next day, and this will enable visiting physicians to find friends who have registered.

Suggestions That Will Facilitate Registration

Members in the Florida area who have Advance Registration Cards will be registered with little or no delay. They should fill in the following information on these advance cards *prior to registration:* Hotel and number of guests. Present the filled-in card at the proper window and you will receive a badge and a copy of the Official Program.

Members without Advance Registration Cards will be given blank cards to fill out and present at the window indicated. You should present your 1954 American Medical Association Membership pocket card with the registration card. This will enable the clerk to complete the registration without delay and give you a badge and a copy of the Official Program.

Registration for General Officers and Delegates

General officers of the American Medical Association and members of the House of Delegates may register for the Scientific Assembly near the entrance to the Flagler Ballroom in the McAllister Hotel on Monday, Nov. 29, before registering with the Reference Committee on Credentials and are advised *not* to register at the Registration Bureau since registration cards have already been made out for their use. It will also be possible for them to register on Saturday, Nov. 27, or Sunday, Nov. 28, in the office of the Secretary of the Association, which will be located near the Flager Ballroom.

This arrangement is made for the convenience of members of the House of Delegates, which will convene on Monday morning at 10 o'clock in the Flagler Ballroom of the McAllister Hotel. Delegates are requested to register for the Scientific Assembly before presenting credentials to the Reference Committee on Credentials of the House of Delegates. Delegates are urged to register early so that all members of the House of Delegates may be seated in time for the opening session of the House.

Registration for Lay Executives

Lay executive secretaries of component and constituent associations may register any time Saturday, Nov. 27, or Sunday, Nov. 28, in the office of the Secretary of the Association at the McAllister Hotel or any time after 12 noon Monday, Nov. 29, during the time of the meeting, at the House of Delegates registration desk in the McAllister Hotel.

TRANSPORTATION

Railroad or Air Travel

It is suggested that those physicians who contemplate traveling to Miami to attend the clinical meeting of the Association secure information concerning railroad and airplane travel directly from their local ticket agents, who are in position to give them information regarding train or plane schedules and fares. Since the meeting is being held close to the Thanksgiving holiday, when travel by all means of transportation will be heavy, reservations should be made promptly.

The major airlines serving Miami are the Eastern, the Delta, the Chicago and Southern, and the National airlines.

Transportation in Miami

Special Miami buses will operate every day during the meeting between the Dinner Key Auditorium and the Miami hotel areas. Their first stop in the hotel area will be at 7:30 a. m. and thereafter continuously during the day. The cost per passenger will be 25¢ each way.

A special arrangement has been made with the taxicab companies whereby five passengers may be carried in a group (not individual pick-up service) for the fare of one. The standard rates are 30¢ for the first one-third mile and 10¢ for each additional one-third mile.

---

* Deceased.

MIAMI HOTELS

If hotel reservations have not yet been secured by physicians other than Delegates or Officers of the Association, who expect to attend the Miami meeting, it is suggested that such physicians fill in and send directly to the Chairman of the SUBCOMMITTEE ON HOTELS, Dr. Hunter B. Rogers, 320 N.E. Fifth Street, Miami, Fla., the application form which may be found on advertising page 48 of this issue of THE JOURNAL. Please do *not* send applications for hotel reservations to the Association offices in Chicago. The Miami Convention Bureau is assisting the Subcommittee on Hotels.

MEETING PLACES

(See the map of Miami on advertising page 48 in this issue of THE JOURNAL.*)*

GENERAL HEADQUARTERS, REGISTRATION BUREAU, SCIENTIFIC EXHIBIT, TECHNICAL EXHIBITS, AND INFORMATION BUREAU: Dinner Key Auditorium.

HOUSE OF DELEGATES: Flagler Ballroom, McAllister Hotel.

SCIENTIFIC MEETINGS: Dinner Key Auditorium. The Dinner Key Auditorium is located at 3360 Dinner Key Drive.

ENTERTAINMENT

The Woman's Auxiliary to the Dade County Medical Society, Mrs. Robert F. Mikell, President, will maintain a Courtesy Corner in the Columbus Hotel for the purpose of welcoming the wives of physicians and other visiting ladies and providing them with details of Miami attractions, which are manifold. The Auxiliary is planning one special tour, a cruise to Villa Vizcaya, the palatial estate of the late James Deering, now maintained as a county-operated museum. The Auxiliary will arrange other tours if desired, and extends special invitation to all doctors' wives to check in at the Courtesy Corner.

Fraternity and Alumni Luncheon and Dinner

The Theta Kappa Psi Medical Fraternity will hold a good fellowship luncheon at the Biscayne Terrace Hotel, Fourth Street and Biscayne Boulevard, Tuesday, Nov. 30, at 12:30 p. m. All members, their wives, friends, and grown children are invited. Members of the Grand Council will be present.

The Tulane Medical Alumni will hold a dinner at the Biscayne Terrace Hotel, Fourth Street and Biscayne Boulevard, Tuesday, Nov. 30. There will be a social hour at 6:30, with dinner at 7:30. Dr. Alton Ochsner of New Orleans will be the guest speaker. All Tulane medical students, alumni members, their wives, friends, and older children are invited.

Visit to Marine Corps Air Station

Members of the Association attending the Clinical Meeting are cordially invited to visit the United States Marine Corps Air Station at Miami during the course of the meeting. Arrangements may be made directly with the Commanding Officer, Col. R. C. Mangrum, USMC, U. S. Marine Corps Air Station, Miami, Fla.

PUBLIC RELATIONS CONFERENCE

Dr. Elmer Hess, President-Elect, will keynote the American Medical Association's Seventh National Medical Public Relations Conference preceding the *Miami Clinical Meeting.* The Conference will get under way at 10 a. m., Sunday, Nov. 28, in the Flagler Ballroom of the McAllister Hotel.

In addition to the address by Dr. Hess, the meeting will feature panel discussions on professional management consultants, implementation of the American Medical Association's policy on veterans' medical care, a presentation by Daniel Mich., editorial director of *Look* magazine, and a demonstration of PR tools and aids available from the Association's Public Relations Department.

A special screening of the Association's new television film, "A Life to Save," has been scheduled.

INVITATIONS TO JAMAICA AND HAITI

The Jamaica Branch of the British Medical Association has invited members of the American Medical Association attending the Miami Clinical Meeting to come to Kingston, the island's capital, for a meeting of the Jamaica association on Saturday, Dec. 4, 1954, to be followed by a reception in the evening. Kingston is only three hours from Miami by air. Travel information may be obtained from local offices of the American Express Company, or from the Jamaica Tourist Board, which maintains an office at 1631 duPont Building, Miami, Fla.

The Medical Association of Haiti also has extended an invitation to American Medical Association members to attend a meeting on Saturday, Dec. 4, 1954, at Port-au-Prince, especially called to honor the Miami Clinical Meeting. In addition to the medical session, a special series of social and entertainment events will be planned for those who accept the invitation. Information concerning the special tour that has been arranged may be obtained from the American Express Company in Miami.

LOCAL COMMITTEE ON ARRANGEMENTS

Homer L. Pearson, General Chairman
R. B. Chrisman Jr., Vice Chairman

General Committee

E. W. Cullipher, Chairman

Julius Alexander
Carl E. Dunaway
J. G. DuPuis
James J. Griffitts
Morton M. Halpern
Robert M. Harris
James J. Hutson
Robert P. Keiser
C. Russell Morgan
James H. P. Mendel
H. B. Rogers
Kenneth Whitmer
Corren P. Youmans

Subcommittee on Program

Ralph W. Jack, Co-Chairman
Ralph S. Sappenfield, Co-Chairman

GENERAL PRACTICE

John E. Dees, Chairman

Matt P. Meehan
Oden A. Schaeffer

MEDICINE

Franz H. Stewart, Chairman

O. W. Burtner
Franklin J. Evans
Francisco A. Hernandez
Victor Kugel
Carlos P. Lamar
Donald F. Marion
David A. Nathan
Benjamin G. Oren
Jack Reiss
Hunter B. Rogers
Marion Salley
James A. Vaughn Jr.
Scheffel H. Wright
Nelson Zivitz

NEUROPSYCHIATRY

James L. Anderson, *Chairman*

Bernard Goodman
J. S. Gottlieb
Emil M. Isberg
Paul S. Jarrett
Paul Kells

OBSTETRICS AND GYNECOLOGY

John D. Milton, *Chairman*

Carl Henry Davis
Norman McLeod
George A. Mitchell
John M. Schultz
Richard F. Stover

PEDIATRICS

Warren W. Quillian, *Chairman*

Robert Grayson
Robert F. Mikell
Wesley S. Nock

SURGERY

Walter C. Jones Jr., *Chairman*

Richard C. Clay
Milton M. Coplan
DeWitt C. Daughtry
George D. Lilly
Claude G. Mentzer
Donald W. Smith
Arthur H. Weiland
Kenneth S. Whitmer

Subcommittee on Scientific Exhibits

George F. Schmitt, Chairman

John W. Dix
Max Dobrin
M. Jay Flipse
Frank W. Hewlett
F. H. Kauders
E. Sterling Nichol
Donald Stannus
Herbert W. Virgin Jr.

Subcommittee on Color Television

L. W. Dowlen, *Chairman*

Ralph F. Allen
E. W. Cullipher
W. L. Fitzgerald
J. Raymond Graves
William H. Izlar
Louis Lemberg
Robert F. Mikell
John D. Milton
H. B. Rogers
Wiley M. Sams
Franz Stewart
Kenneth Whitmer

Subcommittee on *Finance*

Duncan T. McEwan, Co-Chairman
John D. Milton, Co-Chairman

Herbert L. Bryans
Russell B. Carson
Jack Q. Cleveland
E. W. Cullipher
Samuel M. Day
W. L. Fitzgerald
Edward F. Fox
Frederick K. Herpel
Ralph W. Jack
Edward Jelks
Meredith Mallory
Norval M. Marr
E. Norton McKenzie
Robert B. McIver
Louis M. Orr
William C. Roberts
Ralph S. Sappenfield

Subcommittee on Entertainment

Joseph S. Stewart, *Chairman*

Charles R. Burbacher
Richard C. Forman
Robert F. Mikell
Walter Sackett Jr.
M. A. Schofman
Richard F. Stover
Nelson Zivitz

FISHING

Richard F. Stover, *Chairman*

Otto S. Dowlen
Claude D. Holmes
Robert P. Keiser
F. E. Kitchens
Jack A. McKenzie

GENERAL SPORTS

M. A. Schofman, *Chairman*

W. J. Barge
Andrew G. Brown
R. Spencer Howell
Rothwell Lefholz
C. Russell Morgan Jr.
Karl W. Vetter

GOLF

Charles R. Burbacher, Chairman

Vincent P. Corso
Carl Dunaway
Raymond Evans
P. J. Manson
Virgil Pieck
W. Philip Smith

Subcommittee on Opening Session

J. Raymond Graves, Chairman

A. D. Amerise
Samuel Aronovitz
E. C. Brunner
Maurice Greenfield
John R. Richardson

Subcommittee on *Hotels*

Hunter B. Rogers, Chairman

Morris H. Blau
Andrew H. Hinton
A. Buist Litterer
Robert Sam Mosley
Max Pepper
Leonard L. Weil
Corren P. Youmans

Subcommittee on Information and Publicity

Robert F. Dickey, *Chairman*

Edward R. Annis
James W. Merritt
W. W. McKibben
Frederick P. Poppe
John C. Turner Jr.

Subcommittee on *Registration*

Frazier Payton, Chairman

Richard M. Fleming
Joseph H. Lucinian
D. A. Marion
Samuel W. Page Jr.
Lynn W. Whelchel
Frank M. Wood
John W. Snyder

Subcommittee on Hospitality

Wiley Sams, Chairman

Lassar Alexander
R. J. Arango
H. A. Barge
Gail E. Chandler
Herbert Eichert
Francis W. Glenn
L. M. Jenkins
Robert M. Oliver Jr.
Cayetano Panettiere
Harold Rand
M. H. Tallman
John P. Turk
S. Charles Werblow
Hillard W. Willis

Subcommittee on Transportation and Sightseeing

Hollis F. Garrard, Chairman

Herman Boughton
Howard K. Edwards
Stanley Frehling
James J. Hutson
Carl M. Midkiff
J. O. W. Rash
Edwin C. Thomas

Subcommittee on *Attendance*

Donald F. Marion, Chairman

Nelson T. Pearson
Gerard Raap
Maurice Rich
T. D. Sandberg
C. A. Scarborough
E. Clay Shaw
M. P. Travers
Franklyn E. Verdon

Subcommittee on Women Physicians

Martiele Turner, *Chairman*

Bowman W. Branning
M. Louise Cason
Virginia L. Cowell
Helen C. Dayton
Lydia DeVilbiss
Eita Louise DeVore
Bessie French
Minerva Gordon
Ella M. Hediger
Karen Howard
Erna K. Klass
Rose E. London
Elizabeth Lovejoy
Zevart Manoyian
Florence Nathanson
Estella G. Norman
Marie M. Padorr
Mary C. Patras
Jean Jones Perdue
Maxine R. Perdue
Ruth W. Rumsey
Phyllis P. Vaughn
Charlotte K. Wilkins
Iva C. Youmans

HOUSE OF DELEGATES

The House of Delegates will meet at 10 a. m., Monday, Nov. 29, 1954, in the Flagler Ballroom of the McAllister Hotel.

The Reference Committee on Credentials will meet near the entrance to the Flagler Ballroom at 8:30 a. m., Monday, Nov. 29, 1954. Credentials should be presented to the Reference Committee on Credentials as early as possible, so that the official roll of the House may be made up and so that the House of Delegates may organize promptly and proceed with its business. The Reference Committee on Credentials will also meet preceding each subsequent meeting of the House of Delegates.

Each delegate should present properly executed credentials signed by the president or secretary of the constituent association or by the chairman or secretary of the section he represents. Alternates presenting credentials should see that the delegates whose places they are to take have signed the alternate authorization.

Each delegate, *before* registering with the Reference Committee on Credentials, should register for the Scientific Assembly at a desk located near the Flagler Ballroom. Rooms have been provided for the use of committees of the House of Delegates. Reference committees are urged to have their meetings in these rooms and to announce the time of their meetings, so that any who are interested in referred matters may be able to appear before the committees.

Typists will be at the service of the members of the House of Delegates for preparing official reports, resolutions, and motions in the Secretary's Office, which is in close proximity to the Flagler Ballroom.

REFERENCE COMMITTEES OF THE HOUSE OF DELEGATES

The Speaker of the House of Delegates, Dr. James R. Reuling, New York, has appointed delegates to serve on the reference committees of the House at the Miami Meeting, as follows:

Amendments to the Constitution and Bylaws

Edward P. Flood, *Chairman*, New York
William W. Baum, Oregon
Joseph B. Copeland, Texas
Howard K. Petry, Pennsylvania
Robert B. Wood, Tennessee

Board of Trustees and Secretary, Reports of

Eugene F. Hoffman, *Chairman*, California
J. J. Crane, Section on Urology
Aldrich C. Crowe, New Jersey
John S. DeTar, Michigan
H. Kenneth Scatliff, Illinois

Credentials

Walter E. Vest, *Chairman*, West Virginia
Thomas M. d'Angelo, New York
Harlan English, Illinois
James P. Hammond, Vermont
Raymond F. Peterson, Montana

Executive Session

Lewis A. Alesen, *Chairman*, California
R. B. Chrisman Jr., Florida
Peter J. DiNatale, New York
Wesley W. Hall, Nevada
Carrington Williams Sr., Virginia

Hygiene, Public Health, and Industrial Health

Warde B. Allan, *Chairman*, Maryland
Donald Cass, California
Alfred H. Ellison, Indiana
Ralph A. Johnson, Michigan
R. B. Robins, Arkansas

Insurance and Medical Service

William M. Skipp, *Chairman*, Ohio
Charles L. Farrell, Rhode Island
Thurman B. Givan, New York
Charles F. Strosnider, North Carolina
Willard A. Wright, North Dakota

Legislation and Public Relations

William L. Estes Jr., *Chairman*, Pennsylvania
Orwood J. Campbell, Minnesota
James Stevenson, Oklahoma
Deering G. Smith, New Hampshire
Martyn A. Vickers, Maine

Medical Education and Hospitals

Walter P. Anderton, *Chairman*, New York
Otis O. Benson Jr., United States Air Force
Frank H. Krusen, Section on Physical Medicine and Rehabilitation
L. Samuel Sica, New Jersey
Dexter H. Witte, Wisconsin

Medical Military Affairs

Bruce Underwood, *Chairman*, Kentucky
Lawrence R. Dame, Massachusetts
E. Bryce Robinson, Alabama
Jesse D. Hamer, Arizona
Arthur C. Scott Jr., Texas

Miscellaneous Business

Frank J. Elias, *Chairman*, Minnesota
James Z. Appel, Pennsylvania
George M. Fister, Utah
Hans H. Reese, Section on Nervous and Mental Diseases
George A. Woodhouse, Ohio

Reports of Officers

Warren W. Furey, *Chairman*, Illinois
Arthur S. Bristow, Missouri
John P. Culpepper Jr., Mississippi
James Q. Graves, Louisiana
Stanley B. Weld, Connecticut

Rules and Order of Business

William H. Halley, *Chairman*, Colorado
George F. Gsell, Kansas
Karl S. J. Hohlen, Nebraska
Raymond T. Holden, District of Columbia
R. Stanley Kneeshaw, California

Sections and Section Work

Donald C. Conzett, *Chairman*, Iowa
Eustace A. Allen, Georgia
Earle M. Chapman, Massachusetts
H. Thomas McGuire, Delaware
H. Gordon MacLean, California

Tellers

H. Russell Brown, *Chairman*, South Dakota
Paul D. Foster, California
David W. Gaiser, Washington
George D. Johnson, South Carolina
Robert R. Kierland, Section on Dermatology and Syphilology

Sergeants-at-Arms

J. Stanley Kenney, *Master Sergeant*, New York
William F. Brennan, Pennsylvania
Lall G. Montgomery, Section on Pathology and Physiology

MEMBERS OF HOUSE OF DELEGATES CLINICAL MEETING, 1954

Following is a list of members of the House of Delegates:

DELEGATES FROM CONSTITUENT ASSOCIATIONS

ALABAMA

E. Bryce Robinson, Fairfield
J. Paul Jones, Camden

ARIZONA

Jesse D. Hamer, Phoenix

ARKANSAS

William R. Brooksher, Fort Smith
R. B. Robins, Camden

CALIFORNIA

H. Gordon MacLean, Oakland
E. Vincent Askey, Los Angeles
Dwight L. Wilbur, San Francisco
Donald Cass, Los Angeles
J. Lafe Ludwig, Los Angeles
R. Stanley Kneeshaw, San Jose
Robertson Ward, San Francisco
Samuel J. McClendon, San Diego
Eugene F. Hoffman, Los Angeles
John Winston Green, Vallejo
Lewis A. Alesen, Los Angeles
Frank A. MacDonald, Sacramento
Paul D. Foster, Los Angeles

COLORADO

William H. Halley, Denver
George A. Unfug, Pueblo

CONNECTICUT

Creighton Barker, New Haven
Stanley B. Weld, Hartford
Thomas J. Danaher, Torrington

DELAWARE

H. Thomas McGuire, New Castle

DISTRICT OF COLUMBIA

Raymond T. Holden, Washington
Hugh H. Hussey, Washington

FLORIDA

Reuben B. Chrisman Jr., Miami
Louis M. Orr, *Orlando*
Herbert L. Bryans, Pensacola

GEORGIA

Eustace A. Allen, Atlanta
Charles H. Richardson Sr., Macon
Spencer A. Kirkland, Atlanta

IDAHO

Hoyt B. Woolley, Idaho Falls

ILLINOIS

Percy E. Hopkins, Chicago
Warren W. Furey, Chicago
Charles H. Phifer, Chicago
Bernard Klein, Joliet
B. E. Montgomery, Harrisburg
H. Kenneth Scatliff, Chicago
Fred H. Muller, Chicago
J. Mather Pfeiffenberger, Alton
Harlan English, Danville
Everett P. Coleman, Canton

INDIANA

Cleon A. Nafe, Indianapolis
Eli S. Jones, Hammond
Alfred H. Ellison, South Bend
Wendell C. Stover, Boonville

IOWA

George Braunlich, Davenport
Donald C. Conzett, Dubuque
Donovan F. Ward, Dubuque

KANSAS

Laurence S. Nelson Sr., Salina
George F. Gsell, Wichita

KENTUCKY

Clark Bailey, Harlan
Bruce Underwood, Louisville

LOUISIANA

Val H. Fuchs, New Orleans
James Q. Graves, Monroe

MAINE

Martyn A. Vickers, Bangor

MARYLAND

Warde B. Allan, Baltimore
Howard M. Bubert, Baltimore

MASSACHUSETTS

Charles G. Hayden, Boston
Lawrence R. Dame, Greenfield
Philip S. Foisie, Boston
Earle M. Chapman, Boston
Norman A. Welch, Boston
Harold R. Kurth, Lawrence

MICHIGAN

Wyman, D. Barrett, Detroit
Willis H. Huron, Iron Mountain
Robert L. Novy, Detroit
William A. Hyland, Grand Rapids
John S. DeTar, Milan
Ralph A. Johnson, Detroit

MINNESOTA

J. Arnold Bargen, Rochester
Frank J. Elias, Duluth
Orwood J. Campbell, Minneapolis
George A. Earl, St. Paul

MISSISSIPPI

John F. Lucas, Greenwood
John P. Culpepper Jr., Hattiesburg

MISSOURI

Paul Baldwin, Kennett
Arthur S. Bristow, Princeton
Joseph C. Peden Sr., St. Louis
Frank L. Feierabend, Kansas City

MONTANA

Raymond F. Peterson, Butte

NEBRASKA

Joseph D. McCarthy, Omaha
Karl S. J. Hohlen, Lincoln

NEVADA

Wesley W. Hall, Reno

NEW HAMPSHIRE

Deering G. Smith, Nashua

NEW JERSEY

J. Wallace Hurff, Newark
Elmer P. Weigel, Plainfield
L. Samuel Sica, Trenton
Aldrich C. Crowe, Ocean City
William F. Costello, Dover

NEW MEXICO

Carl H. Gellenthien, Valmora

NEW YORK

Walter P. Anderton, New York
James R. Reuling, Bayside
Carlton E. Wertz, Buffalo
Edward P. Flood, Bronx
Herbert H. Bauckus, Buffalo
Thurman B. Givan, Brooklyn
Harold F. R. Brown, Buffalo
John J. H. Keating, New York
Floyd S. Winslow, Rochester
J. Stanley Kenney, New York
John J. Masterson, Brooklyn
Maurice J. Dattelbaum, Brooklyn
Andrew A. Eggston, New York
R. J. Azzari, New York
Peter M. Murray, New York
Peter J. DiNatale, Batavia
Thomas M. d'Angelo, Jackson Heights

NORTH CAROLINA

Charles F. Strosnider, Goldsboro
B. O. Edwards, Asheville
Millard D. Hill, Raleigh

NORTH DAKOTA

Willard A. Wright, Williston

OHIO

Carl A. Lincke, Carrollton
William M. Skipp, Youngstown
George A. Woodhouse, Pleasant Hill
Herbert B. Wright, Cleveland
Arthur A. Brindley, Toledo
L. Howard Schriver, Cincinnati
Clifford C. Sherburne, Columbus

OKLAHOMA

James Stevenson, Tulsa
John F. Burton, Oklahoma City

OREGON

Raymond M. McKeown, Coos Bay
William W. Baum, Salem

PENNSYLVANIA

Harold B. Gardner, Harrisburg
Charles L. Shafer, Kingston
Howard K. Petry, Harrisburg
G. C. Engel, Philadelphia
Louis W. Jones, Wilkes-Barre
William L. Estes Jr., *Bethlehem*
James L. Whitehill, Rochester
George S. Klump, Williamsport
Elmer G. Shelley, North East
James Z. Appel, Lancaster
William F. Brennan, Pittsburgh

RHODE ISLAND

Charles L. Farrell, Pawtucket

SOUTH CAROLINA

William Weston Jr., Columbia
George D. Johnson, Spartanburg

SOUTH DAKOTA

H. Russell Brown, Watertown

TENNESSEE

Robert B. Wood, Knoxville
William C. Chaney, Memphis
Charles M. Hamilton, Nashville

TEXAS

Arthur C. Scott Jr., Temple
John K. Glen, Houston
Louis C. Heare, Port Arthur
Truman C. Terrell, Fort Worth
Milford O. Rouse, Dallas
Joseph B. Copeland, San Antonio

UTAH

George M. Fister, Ogden

VERMONT

James P. Hammond, Bennington

VIRGINIA

Carrington Williams Sr., Richmond
J. Morrison Hutcheson, Richmond

WASHINGTON

R. A. Benson, Bremerton
Raymond L. Zech, Seattle
David W. Gaiser, Spokane

WEST VIRGINIA

Walter E. Vest, Huntington
Frank J. Holroyd, Princeton

WISCONSIN

Stephen E. Gavin, Fond du Lac
Dexter H. Witte, Milwaukee
William D. Stovall, *Madison*

WYOMING

W. Andrew Bunten, Cheyenne

ALASKA

C. Earl Albrecht, Juneau

HAWAII

Homer M. Izumi, Honolulu

PUERTO RICO

F. Sánchez-Castaño, Bega Vaja

DELEGATES FROM THE SECTIONS AND GOVERNMENT SERVICES

ANESTHESIOLOGY

Henry S. Ruth, Philadelphia

DERMATOLOGY AND SYPHILOLOGY

Robert R. Kierland, Rochester, Minn.

DISEASES OF THE CHEST

Hollis E. Johnson, Nashville, Tenn.

EXPERIMENTAL MEDICINE AND THERAPEUTICS

Edgar V. Allen, Rochester, Minn.

GASTROENTEROLOGY AND PROCTOLOGY

Louis A. Buie, Rochester, Minn.

GENERAL PRACTICE

Paul A. Davis, Akron, Ohio

INTERNAL MEDICINE

Charles T. Stone, Galveston, Texas

LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Gordon F. Harkness, Davenport, Iowa

MILITARY MEDICINE

Russel V. Lee, Palo Alto, Calif.

NERVOUS AND MENTAL DISEASES

Hans H. Reese, Madison, Wis.

OBSTETRICS AND GYNECOLOGY

Ralph E. Campbell, Madison, Wis.

OPHTHALMOLOGY

William L. Benedict, Rochester, Minn.

ORTHOPEDIC SURGERY

Edward L. Compere, Chicago

PATHOLOGY AND PHYSIOLOGY

Lall G. Montgomery, Muncie, Ind.

PEDIATRICS

W. L. Crawford, Rockford, Ill.

PHYSICAL MEDICINE AND REHABILITATION

Frank H. Krusen, Rochester, Minn.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

R. T. Johnstone, Los Angeles

RADIOLOGY

Byrl R. Kirklin, Rochester, Minn.

SURGERY, GENERAL AND ABDOMINAL

Grover C. Penberthy, Detroit

UROLOGY

J. J. Crane, Los Angeles

UNITED STATES ARMY

Silas B. Hays

UNITED STATES NAVY

B. W. Hogan

UNITED STATES AIR FORCE

Otis O. Benson Jr.

PUBLIC HEALTH SERVICE

W. Palmer Dearing

VETERANS ADMINISTRATION

Roy A. Wolford

There will be present also two students representing the Student American Medical Association.

SCIENTIFIC PROGRAM

DINNER KEY AUDITORIUM

LECTURES

OPENING GENERAL ASSEMBLY: HALL D

Monday morning, Nov. 29

HENRY R. VIETS, Brookline, Mass., Presiding

10:25 **Invocation**
E. CLAYTON CALHOUN, Pastor, Riverside Methodist Church, Miami.

10:30 **Welcome:**
ABE ARONOVITZ, Mayor, City of Miami.
E. W. CULLIPHER, President, Dade County Medical Association, Miami.
DUNCAN T. MCEWAN, President, Florida Medical Association, Orlando, Fla.

11:00 **Principal Lay Speaker**
LEROY COLLINS, Governor-Elect, State of Florida, Tallahassee, Fla.

11:30 **A Senior Surgeon Looks at General Practice.**
ROBERT L. SANDERS, Memphis, Tenn.

SURGERY: HALL E

Monday afternoon, Nov. 29

RALPH S. SAPPENFIELD, Miami, Presiding

1:00 **Anesthesiology and General Surgery.** DONALD H. STUBBS, Washington, D. C.

1:30 **Possibilities and Limitations of Supportive Intravenous Therapy** JONATHAN E. RHOADS, Philadelphia.

2:00 **Supply of Transfusion of Blood in Case of Mass Casualties.** JOHN B. ALSEVER, Washington, D. C.

2:30 Intermission.

MILTON M. COPLAN, Miami, Presiding

3:00 **The Management of Urinary Tract Infection Complicating or Developing in the Course of General Surgical Procedures.** HAROLD P. MCDONALD, Atlanta, Ga.

3:15 **Hematuria.** CLARENCE G. BANDLER, New York.

3:30 **Urologic Injuries of the Urinary Tract Resulting from Violence.** WILLIAM J. BAKER, Chicago.
EDWIN C. GRAF, Chicago.

3:45 **Urologic Injuries Resulting from Left Colon and Pelvic Surgery.** JOHN L. EMMETT, Rochester, Minn.

MEDICINE: HALL B

Monday afternoon, Nov. 29

O. W. BURTNER, Miami, Presiding

1:00 **Diagnosis and Treatment of Anemia.**
CHARLES M. HUGULEY JR., Atlanta, Ga.

1:30 **Diagnosis and Treatment of Leukemias.**
WAYNE RUNDELS, Durham, N. C.

2.00 **Newer Concepts in Blood Disease.**
CHARLES M. HUGULEY JR., Atlanta, Ga.
WAYNE RUNDELS, Durham, N. C.

2:30 Intermission.

3:00 **Present Concepts in Diagnosis and Treatment of Rheumatic Arthritis.** RALPH H. BOOTS, New York.

3:30 **Basic Concepts in Antibiotic Therapy.**
PHILIP Y. PATERSON, Charlottesville, Va.

OBSTETRICS AND GYNECOLOGY: HALL C

Monday afternoon, Nov. 29

RALPH W. JACK, Miami, Presiding

1:00 **Toxemia.** WILLIS E. BROWN, Little Rock, Ark.

1:30 **Dysmenorrhea.** WILLIAM BICKERS, Richmond, Va.

2:00 **Prevention of Psychiatric Complications of Pregnancy and Puerperium.**
JEROME M. KUMMER, Santa Monica, Calif.

2:30 Intermission.

JOHN M. SCHULTZ, Miami, Presiding

3:00 **Symposium on Sterility.**
ROBERT A. ROSS, Chapel Hill, N. C., Moderator
The Cervix as a Barrier to Fertility.
C. LEE BUXTON, New Haven, Conn.
The Male Aspect of Infertility.
FRED A. SIMMONS, Boston.
The Management of Female Infertility.
B. BERNARD WEINSTEIN, New Orleans.

SURGERY: HALL E

Tuesday morning, Nov. 30

ARTHUR H. WEILAND, Miami, Presiding

9:00 **Symposium: Trauma.**
Head Injuries.
WINCHELL MCK. CRAIG, Rochester, Minn.
Chest Injuries. DUANE M. CARR, Memphis, Tenn.
Extremity Fractures. J. ALBERT KEY, St. Louis.
Shoulder Injuries. DAVID M. BOSWORTH, New York.
Spine Injuries. GEORGE J. GARCEAU, Indianapolis.

10:30 Intermission.

11:00 **Symposium: Trauma.**
Hand Injuries. S. BENJAMIN FOWLER, Nashville, Tenn.
Maxillofacial Injuries.
MILTON T. EDGERTON JR., Baltimore.
Hip Fractures. MATHER CLEVELAND, New York.

MEDICINE: HALL B

Tuesday morning, Nov. 30

FRANZ H. STEWART, Miami, Presiding

9:00 **Panel: Modern Concepts in Chemotherapy of Pulmonary Tuberculosis.**
JACK REISS, Coral Gables, Fla., Moderator
H. CORWIN HINSHAW, San Francisco.
OSCAR AUERBACH, East Orange, N. J.
CARL W. TEMPLE, Denver.
WILLIAM B. TUCKER, Durham, N. C.

10:00 **Treatment of Acute Pulmonary Infection.**
JOHN H. SEABURY, New Orleans.

10:30 Intermission.

11:00 **Pulmonary Brucellosis—Report of Fifty-Nine Cases.**
ALVIS E. GREER, Houston, Texas.

11:30 **Cough Syncope.** VINCENT J. DERBES, New Orleans.

12:00 **Recent Advances in Management of Chronic Pulmonary Emphysema.** MAURICE S. SEGAL, Boston.

OBSTETRICS AND GYNECOLOGY: HALL C

Tuesday morning, Nov. 30

John D. Milton, Miami, Presiding

9:00 **Symposium: Pelvic Carcinoma.**
Herbert E. Schmitz, Chicago, Moderator

Radiological Aspects.
Charles L. Martin, Dallas, Texas.

Urological Aspects. C. Bernard Brack, Baltimore.

Surgical Aspects. Joseph Kelso, Oklahoma City.

10:30 Intermission.

Carl Henry Davis, Miami, Presiding

11:00 **Symposium: Obstetric Hemorrhage.**
F. Bayard Carter, Durham, N. C., Moderator

Antepartum Bleeding. John S. Fish, Atlanta, Ga.

Postpartum Bleeding.
Lawrence L. Hester Jr., Charleston, S. C.

Early Bleeding.
William N. Thornton, Charlottesville, Va.

Transfusion Difficulties.
Louis H. Douglass, Baltimore.

SURGERY: HALL E

Tuesday afternoon, Nov. 30

Kenneth S. Whitmer, Miami, Presiding

2:00 **Symposium: Facial Pain.**

Otorhinolaryngology. Watt W. Eagle, Durham, N. C.

Neurosurgery. Eldridge Campbell, Albany, N. Y.

Ophthalmology. Alston Callahan, Birmingham, Ala.

3:00 **Mismanagement of Proctologic Problems.**
J. Peerman Nesselrod, Evanston, Ill.

3:30 **Factors Contributing to Injuries of the Common Hepatic Duct.** Frank Johns, Richmond, Va.

MEDICINE: HALL B

Tuesday afternoon, Nov. 30

S. Marion Salley, *Miami, Presiding*

2:00 **Use and Abuse of Cortisone.**
Virgil P. Sydenstricker, Augusta, Ga.

2:30 **Diabetes Mellitus.**
Thomas P. Findley Jr., Augusta, Ga.

3:00 **Indications for the Use of Estrogens and Androgens in the Female.** Robert B. Greenblatt, Augusta, Ga.

3:30 **Which Goiters Are Best Treated by Radioactive Iodine and Which by Surgery?**
Edward H. Rynearson, Rochester, Minn.

PEDIATRICS: HALL C

Tuesday afternoon, Nov. 30

Warren W. Quillian, Coral Cables, Presiding

2:00 **Humidification in Pediatrics.**
Samuel F. Ravenel, Greensboro, N. C.

2:30 **Pneumonia in Newborn Period.**
Alexander J. Schaffer, Baltimore.

3:00 **Intolerance to Milk—Clinical Observations.**
Preston A. McLendon, Washington, D. C.

3:30 **The Influence of Liver on Bone Metabolism with Report on Two Cases.** M. Hines Roberts, Atlanta, Ga.

4:00 **Nutrition in Relation to Infection.**
Joseph A. Johnston, Detroit.

SURGERY: HALL E

Wednesday morning, Dec. 1

George D. Lilly, Miami, Presiding

9:00 **Symposium: Vascular Diseases.**

Developments in Surgery for Congenital Heart Disease.
Paul T. DeCamp, New Orleans.

Cardiac Injuries. Denton A. Cooley, Houston, Texas.

Peripheral Vascular Injuries.
Francis N. Cooke, Miami.

Aneurysms. Michael E. De Bakey, Houston, Texas.

10:30 Intermission.

11:00 **Arterial Circulatory Insufficiencies.**
Geza De Takats, Chicago.

Discussants: Keith S. Grimson, Durham, N. C.
Richard T. Shackelford, Baltimore.

MEDICINE: HALL B

Wednesday morning, Dec. 1

E. Sterling Nichol, Miami, Presiding

9:00 **Coronary Artery Disease, Anginal Syndrome.**
Joseph Gordon Barrow, Atlanta, Ga.

9:30 **Disordered Rhythms, Clinical Diagnosis and Treatment.**
George E. Burch, New Orleans.

10:00 **Clinical Diagnosis of Congenital Heart Lesions Amenable to Surgery.** Benjamin M. Gasul, Chicago.

10:30 Intermission.

11:00 **Congestive Failure and Electrolytes.**
George E. Burch, New Orleans.

11:30 **Treatment of Coronary Thrombosis with Myocardial Infarction.** J. Edwin Wood Jr., Charlottesville, Va.

12:00 **Peripheral Vascular Disease.**
Andrew G. Prandoni, Washington, D. C.

PEDIATRICS: HALL C

Wednesday morning, Dec. 1

W. W. McKibben, Miami, Presiding

9:00 **How Not to Treat Children.**
Robert B. Lawson, Miami.

9:30 **The Man Behind the M.D.**
Julian P. Price, Florence, S. C.

10:00 **Progress in Pediatrics.**
Wilburt C. Davison, Durham, N. C.

10:30 Intermission.

11:00 **Immunization Procedures in Infancy and Childhood.**
Aims C. McGuinness, Washington, D. C.

11:30 **Management of Purulent Meningitis.**
James N. Etteldorf, Memphis, Tenn.

12:00 **Accident Prevention in Childhood.**
Hugh A. Carithers, Jacksonville, Fla.

SURGERY: HALL E

Wednesday afternoon, Dec. 1

Donald W. Smith, Miami, Presiding

2:00 **Symposium: Malignancies.**
Stomach. Gordon P. McNeer, New York.
Colon. Owen H. Wangensteen, Minneapolis.
Cervix. Joe V. Meigs, Boston.
Breast. J. Elliott Scarborough Jr., Atlanta, Ga.

MEDICINE: HALL B

Wednesday afternoon, Dec. 1

Benjamin G. Oren, M.D., Miami, Presiding

2:00 **Common Nutritional Problems in Medicine.** Robert Elman, St. Louis.
2:30 **Peptic Ulcer.** Julian M. Ruffin, Durham, N. C.
3:00 **Diagnostic Features of Pancreatic Disease.** J. Edward Berk, Philadelphia.
3:30 **Amebiasis.** Gordon McHardy, New Orleans.

NEUROPSYCHIATRY: HALL C

Wednesday afternoon, Dec. 1

James L. Anderson, Miami, Presiding

2:00 **Opening Address.** R. Finley Gayle, Richmond, Va.
2:30 **Psychiatric Symptoms Masking Neurological Syndromes.** Joseph S. Skobba, Atlanta, Ga.
Discussants: Edward Williams, Miami.
Theodore L. Soniat, New Orleans.
Walter O. Klingman, Charlottesville, Va.
3:00 **Chlorpromazine in Conjunction with Other Psychiatric Therapies.** Hamilton Ford, Galveston, Texas.
3:30 **The Dynamics of Psychotherapy of Depression.** David C. Wilson, Charlottesville, Va.

SURGERY: HALL E

Thursday morning, Dec. 2

Walter C. Jones, Miami, Presiding

9:00 **Symposium: Jaundice.**
Richard B. Cattell, Boston, Moderator
Discussants: John D. Martin, Atlanta, Ga.
Donald F. Marion, Miami.
10:30 Intermission.
11:00 **Symposium: Gastrointestinal Bleeding.** Alton Ochsner, New Orleans.
Discussants: Denton A. Cooley, Houston, Texas.
Michael E. De Bakey, Houston, Texas.

MEDICINE: HALL B

Thursday morning, Dec. 2

Scheffel H. Wright, Miami, Presiding

9.00 **Rheumatic Fever, Prophylaxis, Diagnosis, and Treatment.** T. Duckett Jones, New York.
9:30 **Heart Disease Amenable to Surgery.** E. Cowles Andrus, Baltimore.
10.00 **Some Medical Aspects of Thromboembolic Disease.** Lawrence T. Minish Jr., Louisville, Ky.
10:30 Intermission.
11:00 **Panel: Hypertension and Arteriosclerosis.**
Victor H. Kugel, Miami Beach, Moderator
E. Cowles Andrus, Baltimore.
George E. Burch, New Orleans.
Joseph Gordon Barrow, Atlanta, Ga.

NEUROPSYCHIATRY: HALL C

Thursday morning, Dec. 2

Jacques S. Gottlieb, Miami, Presiding

9:00 **Ten Psychosomatic Problems.** George C. Ham, Chapel Hill, N. C.
9:30 **Peritoneal Shunt for Hydrocephalus Utilizing the Fibria of Ligated Fallopian Tube for Entrance into Peritoneal Cavity.** Griffith R. Harsh III, Birmingham, Ala.
10:00 **Selective Leukotomy Based on Intracerebral Electrography, Clinical Results.** Magnus C. Petersen, Rochester, Minn.
10:30 Intermission.
11:00 **Manic-Depressive Psychosis in Children.** John D. Campbell, Atlanta, Ga.
11:30 **Reserpine in the Management of the Mentally Ill and the Mentally Retarded.** Robert H. Noce, Modesto, Calif.

MOTION PICTURES

HALL A

The following films will be shown each day, at the times indicated, beginning Monday at 9:30 a. m. and continuing through Thursday noon:

9:30 a. m.

Syphilitic Venereal Disease

Evan W. Thomas, New York

The following stages of the disease are discussed and illustrated in detail: early syphilis (primary and secondary), latent syphilis, and late syphilis (gummas and the chronic diffuse inflammations of cardiovascular and neurosyphilis). Laboratory tests are depicted wherever pertinent: x-rays and heart sounds related to specific conditions are included as further diagnostic aids. Effective therapeutic regimens for all types of syphilis with penicillin comprise the final section of the film. Sound, 25 minutes.

9:55 a. m.

Principles of Fracture Reduction

Veterans Administration, Washington, D. C.

This film discusses certain principles, such as early reduction, neutralization of displacing muscle pulls, countertraction, and suspension, and shows application of principles to reduction of fractures in a farmhouse situation where modern equipment is not available. Sound, 29 minutes.

10:24 a. m.

Intravenous Anesthesia with Barbiturates

Mary Karp, W. O. McQuiston, and J. E. Remlinger, American Society of Anesthesiologists and American College of Surgeons, Chicago

This motion picture shows the principal actions, uses, and characteristics of thiobarbiturates, demonstrations and techniques of administration, clinical case work, and indications and contraindications. Sound, 33 minutes.

10:57 a. m.

Pudendal Block

Lees M. Schadel Jr., Fort Lauderdale, Fla.

The film presents a method of producing obstetric analgesia and complete perineal anesthesia by a combination of meperidine and scopolamine, and bilateral pudendal nerve block. Sound, 9 minutes.

11:06 a. m.

Cancer of the Prostate

Perry B. Hudson, Edith E. Sproul, and Thomas Bridges, New York (Color kinescope of a television program sponsored by the American Cancer Society)

Dr. Hudson delineates the prevalence of cancer of the prostate and defines the newer methods for detection and early diagnosis of prostatic cancer, including prostatic smears and the needle, punch, and open biopsy techniques. The use of hormones, the role of radical surgery, and palliation in terminal cases are discussed in terms of management. Dr. Sproul traces the pathogenesis of the disease, and Dr. Bridges describes neurosurgical methods for pain control. Dr. Hudson urges that every conservative operation for prostatic obstruction be immediately preceded by open perineal biopsy; by this means 15,000 proved cancers of the prostate will be found each year. Sound, 53 minutes.

11:59 a. m.

Technique for Cholecystectomy with Common Duct Exploration

John L. Madden, St. Clare's Hospital, New York

A standard operative technique in a typical case is depicted, including diagnostic points of importance, and preoperative and postoperative cholecystograms. Significant features are a demonstration of anatomic relationships of vessels and ducts in the gallbladder region and examples of the various types of gallbladder calculi according to the classification of Aschoff. Sound, 31 minutes.

1:30 p. m.

A Simple Operation for Revascularization of the Myocardium in Coronary Heart Disease

M. S. Mazel, Edgewater Hospital, Chicago

This film briefly demonstrates Dr. Samuel Thompson's technique of revascularization of the myocardium for ischemia due to chronic coronary heart disease by means of distributing the U. S. P. talc (magnesium silicon) within the pericardium. The operation and the instruments are demonstrated on dogs, and the technique of surgery is illustrated. The dogs are shown several weeks after the successful operation with the anterior descending branch of the coronary artery ligated. The operation is also shown in the human, and several cases are demonstrated both before and after surgery. Silent, 20 minutes.

1:50 p. m.

Examining the Well Child

Oklahoma State Department of Health, Oklahoma City

This film considers attitudes, approaches, and an over-all procedure for examination of the well child. It is not meant to be a training film in the methods of examining a well child. Sound, 18 minutes.

2:08 p. m.

Nephrosis in Children

Robert E. Cooke, Yale University School of Medicine, New Haven

A primary purpose of this film is to assist the practitioner in recognizing childhood nephrosis during its insidious onset. The motion picture concerns diagnostic features, clinical and laboratory findings, course of the disease, major principles of management, complications, and prognosis. Sound, 20 minutes.

2:28 p. m.

Pheochromocytoma

Keith S. Grimson, Duke University, Durham, N. C.

This film is a pictorial discussion on the differential diagnosis of pheochromocytoma. Theory, based on present knowledge, is presented to show pheochromocytoma as a cause of hypertension and certain drugs which are helpful in making a diagnosis. Actual case histories are presented to illustrate that the signs and symptoms of pheochomocytoma may resemble other conditions. Because pheochromocytoma is the only presently known curable cause of hypertension, the ease and importance of screening tests currently available to the general practitioner is emphasized. Sound, 25 minutes.

2:53 p. m.

Antituberculosis Drugs in the Medical and Surgical Treatment of Tuberculosis

H. Corwin Hinshaw, San Francisco

This film shows what can be accomplished frequently when hospital care, together with antibacterial drug therapy, pulmonary collapse, and surgical resection, are all brought to bear upon the problem, when necessary. Sound, 22 minutes.

3:15 p. m.

One Stage Total Colectomy for Ulcerative Colitis

G. Gavin Miller, Montreal, Canada

This film illustrates the indications for surgical intervention in ulcerative colitis. It shows the complications which make surgery necessary, demonstrates technique of the operation, shows by means of charts the results of colectomy in a typical case, and finally the handling of the ileostomy by means of the Rutzen bag. Sound, 22 minutes.

3:37 p. m.

Surgery of the Aged

Erwin R. Schmidt, Madison, Wis.

Indications for and types of operation are discussed for nine cases including gangrene with diabetes; arteriosclerosis; trauma; Buerger's disease; single and multiple amputation; amputation for carcinoma of the face and neck; pharyngoesophageal diverticulum; and carcinoma of the esophagus with Maydle gastrostomy. Sound, 33 minutes.

4:10 p. m.

The Fenestration Operation

J. Brown Farrior, Tampa, Fla.

The film demonstrates the indications, technique, and lasting results of the fenestration operation. The audiograms of good, fair, and poor candidates illustrate the selection of cases for the fenestration operation. The steps in surgical technique are illustrated, including the tracheal anesthesia and primary split thickness skin graft, the endaural approach to the labyrinth, and the microscopic perfection of the fenestra itself. Animated charts and illustrations are used to show minute aspects of the fenestration technique. The primary and lasting results are shown on more than 500 operations. Silent, 23 minutes.

4:33 p. m.

The Management of Obesity

Norman Jolliffe, New York

This is a lecture-type film presenting Dr. Jolliffe's views on the subject of obesity. Methods of diagnosis and the dietetic management of obese patients are discussed. This film is especially suitable for the doctor in general practice. Sound, 25 minutes.

SPECIAL EVENING SHOWING: FLAGLER ROOM, McALLISTER HOTEL

Tuesday evening, Nov. 30

HENRY R. VIETS, Brookline, Mass., Presiding

8:15 p. m.

Congenital Malformations of the Heart: Part III. Cyanotic Heart Disease

ROBERT F. RUSHMER, University of Washington, Seattle

The film presents the embryology, origin, and functional significance of congenital malformations of the heart which produce cyanosis. Principles of the surgical therapy are discussed. Sound, 28 minutes. *Introduction by Denton A. Cooley, Houston, Texas.*

8:45 p. m.

Lung Cancer: The Problem of Early Diagnosis
(Première showing)

AMERICAN CANCER SOCIETY and NATIONAL CANCER INSTITUTE

Emphasis is placed on the differential diagnostic problems of patients with symptoms referable to the chest and particularly of patients in the early asymptomatic stages of the disease. The practicing physician's work-up of the patient is outlined in some detail, with emphasis on complete x-ray studies, sputum cytology, etc. The technique of bronchoscopy and bronchial washings for cytology are shown. The film ends with a strong plea for early detection of silent lesions by routine chest films. Sound, 30 minutes. Introduced by Ashbel C. Williams, Jacksonville, Fla.

9:20 p. m.

Differential Diagnosis of the Arthritides (Rheumatoid, Osteo, and Gouty) *(Première showing)*

WILLIAM B. RAWLS, New York

This film shows by the split frame technique both rheumatoid arthritis and osteoarthritis at the same time. Differential diagnostic points are discussed, and treatment by cortisone, intra-articular injections of hydrocortisone, Butazolidin, gold therapy, exercises, etc., are shown. Sound, 30 minutes. Discussion by author.

COLOR TELEVISION

HALL D

The following program is presented in cooperation with Smith, Kline & French Laboratories, Philadelphia, under the chairmanship of L. W. DOWLEN, Miami. The program will originate at Jackson Memorial Hospital and will be viewed on screens in Hall D, Dinner Key Auditorium.

Monday afternoon, Nov. 29

2:00 **Dermatology Clinic.**
LEWIS CAPLAND, Miami Beach.
A. BUIST LITTERER, Miami.
LOUIS C. SKINNER JR., Coral Gables.

2:30 **Visible Skin Tumors.**
HOLLIS F. GARRARD, Miami.
HERMAN GLASSMAN, Miami.
FREDERICK B. ZAUGG, Coral Gables.

3:00 **Multiple Sclerosis.** JAMES L. ANDERSON, Miami.
PAUL S. JARRETT, Miami.
WILLIAM H. IZLAR, Miami.

3:30 **Parkinsonian Syndrome.** WILLIAM H. IZLAR, Miami.
PAUL KELLS, Miami.

Tuesday morning, Nov. 30

9:15 **Thyroidectomy.** RAYMOND L. EVANS, Miami.
JOHN W. SNYDER, Miami.

10:00 **Bilateral Inguinal Herniorrhaphy.**
WALTER C. JONES, Miami.

10:45 **Sympathectomy.** GEORGE D. LILLY, Miami.
FRANCIS N. COOKE, Miami.
DONALD W. SMITH, Miami.

Tuesday afternoon, Nov. 30

2:00 **Clinic on Jaundice.** DONALD F. MARION, Miami.
JOHN B. MIALE, Miami.
JOHN W. BOLTON, Miami.

3:10 **Differential Diagnosis of Congenital Heart Disease by Cardiac Catheterization.** F. A. HERNANDEZ, Miami.
REUBEN ROCHKIND, Miami.
MAURICE BLINSKI, Miami.

3:40 **Clinic on Hypertension.** SCHEFFEL H. WRIGHT, Miami.
MORTON M. HALPERN, Miami.
E. E. PIERLEONI, Miami.

Wednesday morning, Dec. 1

9:15 **Skin Grafts.** CLIFFORD C. SNYDER, Miami.
GEORGE W. ROBERTSON III, Miami.
ROBERT F. DICKEY, Miami.

10:00 **Hemorrhoidectomy.** RALPH F. ALLEN, Miami.
R. SAMUELS MOSLEY, Coral Gables.
GEORGE WILLIAMS JR., Miami.

10:45 **Reduction of Fractures.**
CLAUDE D. HOLMES JR., Miami.
LEON H. MIMS JR., Miami.
P. J. MANSON, Miami.
ARTHUR H. WEILAND, Miami.

Wednesday afternoon, Dec. 1

2:00 **Care of the Premature.**
WARREN W. QUILLIAN, Coral Gables.
ROBERT J. GRAYSON, Miami Beach.

2:30 **The Criteria for and the Technique of an Exchange Transfusion in Erythroblastosis.**
JAMES J. GRIFFITTS, Miami.
JAMES H. SMITH, Miami.
GUNNARD J. ANTELL, Coral Gables.

3:10 **Pellet Implantation in Treatment of Carcinoma of the Breast.** CARLOS P. LAMAR, Miami.
HUNTER B. ROGERS, Miami.

3:40 **Treatment of Snake Bite.**
J. H. MICKLEY, Hollywood, Fla.

Thursday morning, Dec. 2

9:15 **Abdominal Hysterectomy.** JOHN D. MILTON, Miami.

10:00 **Suprapubic Cystotomy.** W. L. FITZGERALD, Miami.
MILTON M. COPLAN, Miami.
PERRY D. MELVIN, Miami.

10:45 **Cataracts.** DAVID KIRSH, Miami.
WHITMER, Miami.
DUNAWAY, Miami.
[illegible]MAN,

THE SCIENTIFIC EXHIBIT

Problems of Delivery—Manikin Demonstrations

Manikin demonstrations on problems of delivery will be conducted at stated intervals throughout the week by outstanding obstetricians. An opportunity for questions and discussion will be given after each demonstration.

George A. Mitchell, *Coral Gables, Fla., is chairman of the group in charge of demonstrations. The following schedule will be presented:*

Monday, Nov. 29

10:30 a.m. **Breech Deliveries.**
Willis E. Brown, Little Rock, Ark., and William T. Mixson Jr., *Miami.*

Tuesday, Nov. 30

10:30 a.m. **Outlet Forceps.**
George R. Gage and Joseph H. Rudnick, Coral Gables, Fla.

1:00 p.m. **Persistent Occiput Posterior.**
Howard H. Groskloss and Robert M. Watson, Miami.

4:00 p.m. **Persistent Occiput Transverse.**
Joseph W. Scott and Daniel O. Hammond, Miami.

Wednesday, Dec. 1

10:30 a.m. **Persistent Occiput Transverse.**
William M. Howdon and James F. Gallagher Jr., Miami.

1:00 p.m. **Breech Deliveries.**
Roland F. Phillips and Robert B. Ward, Miami.

4:00 p.m. ***Persistent Occiput Posterior.***
Richard C. Forman and Irvin Seaman, Coral Gables, Fla.

Thursday, Dec. 2

10:30 a.m. ***External and Internal Podalic Version.***
Henry H. Caffee, Coral Gables, Fla., and M. S. Hernandez, Miami.

Special Exhibit on Fractures

The Special Exhibit on Fractures is presented under the auspices of the following committee:

Gordon M. Morrison, *Boston,* chairman
Ralph G. Carothers, *Cincinnati*
Herbert W. Virgin Jr., Miami, Fla.
Kellogg Speed, Chicago, *member emeritus*

Continuous demonstrations *will be conducted daily from 9:00* a. m. to 12:00 noon and from 2:00 p. m. to 4:00 p. m. from Monday morning to Thursday noon on the following subjects:

Fractures of the Ankle.
Fractures Resulting from a Fall on the Outstretched Hand.
Fractures of the Lower End of the Radius.

Basic principles will be stressed, with *particular* emphasis on the interest of the physician in general practice. Ample opportunity will be allowed for questions. Members of the committee will be present to discuss individual problems, and physicians are invited to bring roentgenograms from troublesome cases.

A pamphlet giving the essential features of the exhibit has been *prepared for* distribution.

The following demonstrators *will* assist the Committee in the presentation of the exhibit:

Roy E. Brackin, *Winnetka, Ill.*
Nicholas J. Giannestras, Cincinnati
Murray E. Gibbens, Denver
Morris E. Goldman, Lewiston, Maine
Harry B. Hall, *Minneapolis*
William J. Kisiel, *Springfield,* Mass.
Sydney N. Lyttle, *Flint,* Mich.
Roland F. Neumann, St. Louis
Theodore Norley, West Palm Beach, Fla.
Edmund T. Rumble Jr., Callicoon, N. Y.

Angiocardiography in Normal and Abnormal Hearts

B. M. Gasul, E. H. Fell, C. J. Marienfeld, H. Bucheleres, Gershon Hait, R. F. Dillon, *P. G.* Szan Maurice Lev, and Gloria Jones, the *Hektoen Instit* for Medical Research, Cook County Children's Hospi *Presbyterian Hospital,* and *University of Illinois Coll* of Medicine, Chicago.

This exhibit is based on a *seven year study* of *over* separate angiocardiograms. Almost all of these were taken *infants and children.* The diagnosis of each separate entity tha being shown is based on a correlation of clinical, fluoroscoı *roentgenologic, electrocardiographic, angiocardiographic,* a *catheterization* studies of the heart and great vessels. In m of these patients *the diagnosis is still further confirmed by* eitl *surgery* or *autopsy.* The angiocardiographic appearance of normal heart in various views and the most *important clini entities of the* cyanotic and noncyanotic types of congenital m formations of the heart are demonstrated. Color photograı of *the* hemodynamics of each entity *as well as moulages* p pared from autopsy material *are included.* A section of puzzli *angiocardiograms without legends* is presented for the visito own analysis.

Coronary Disease in Young American Males

William F. Enos Jr. and James C. Beyer, Armed Forc *Institute* of Pathology, Washington, D. C.

The exhibit depicts the pathology of lesions of the corona arteries in *Americans killed in action* in Korea. Charts illustra the total incidence, degree of involvement, and location of tl lesions. Color transparencies showing the *gross* findings attem to correlate the *anatomy* and the hemodynamics of the coronaı arteries with *plaque formation. Photomicrographs* illustrate tl progressive *changes* in the *microscopic* character of the lesion

Causes, *Prevention,* and Treatment of *Cardiovascular* Diseası in Aging Persons

Raymond Harris, Ann Lee *Home, Albany,* N. Y.

This exhibit depicts the various types of heart *disease* com monly occurring in elderly persons, *including hypertensioı arteriosclerosis,* congestive heart failure, chronic cor pulmonalı nutritional heart disease, and senile heart disease. Investigativ data obtained at the Ann Lee Home concerning the treatmen of these conditions will be *shown* by means of *photographs* x-rays, electrocardiograms, and *ballistocardiograms.* The result of treatment with *reserpine and gitalin in a series* of cases wil also be presented.

Newer Clinical and Biochemical Aspects *of the Eighty to* Onı *Hundred Year Old Patient*

H. B. Eiber, A. A. Goldbloom, O. *Deutschberger,* and I. *Chapman,* New York Medical College, Flower and Fifth Avenue Hospitals, New York.

Hitherto unpublished data on 650 "normal" *patients* (including *100 aged 80 to 100 years)* are presented. The patients had no previous *histories* of diabetes, coronary, metabolic, venereal, or *endocrine disease.* Analytical ultracentrifuge *lipoprotein fractions,* x-rays, electrophoresis, *electrocardiograms,* ballistocardiograms, and autopsy findings were correlated. A "threshold" occurs in the *60 to 75* year group, after which there *is a reversal* of biochemical and/or physical processes. Many *of the patients* were treated with a combination of Chlorpromazine *and Rauwolfia* serpentina. Marked improvement was noted in *senile* agitation as well as hypertension. The use of this *combination* of drugs is reported *for the* first time.

Inhibition of Experimental Venous Thrombosis and Clinical Applications

IRWIN D. STEIN, Mount Vernon Hospital, Mount Vernon, N. Y.

The exhibit shows (1) color photomicrographs of inflammatory reaction produced experimentally in veins of rabbits, comparing phenylbutazone-treated group and controls at frequent intervals from 3 to 48 hours with striking inhibition of inflammation and size and character of clot in former group; (2) color photographs of rapid subsidence of inflammation in various types of superficial phlebitis (in varicose veins, due to chemicals or trauma, in thromboangiitis obliterans) refractory to other types of treatment; (3) charts and color photographs illustrating method and indications for use of phenylbutazone in phlebitis.

Therapy of Heart Failure

GEORGE F. SCHMITT, University of Miami School of Medicine, Miami, Fla.

This exhibit consists of a demonstration of the more commonly used digitalis and diuretic principles. A complete description of the low-sodium diet is presented. The various methods of oxygen therapy are delineated.

A Simple Operation for the Treatment of Chronic Coronary Heart Disease

M. S. MAZEL, IRA SCHNAER, MAX BERNSTEIN, IRWIN CALLEN, LAWRENCE WU, and ALFRED BONK, Edgewater Hospital, Chicago.

The exhibit demonstrates a modification of Dr. Samuel Thompson's technique of revascularization of the myocardium for ischemia due to coronary heart disease by means of distributing the U.S.P. talc (magnesium silicon) within the pericardium. The operation and the instruments are demonstrated on the human, and several cases are demonstrated both before and after surgery. Indications for this operation are enumerated, and electrocardiograph tracings of cases operated are demonstrated, as well as histological sections of normal pericardium, revascularized pericardium, and autopsy specimens of patients dying of other causes, having been revascularized by this method.

The Medical Management of Hypertension

EDWARD W. DENNIS, ROBERT L. HERSCHBERGER, JOHN H. MOYER, and RALPH V. FORD, Baylor University College of Medicine, Houston, Texas.

Appropriate charts and diagrams explain (1) the general physiology and pharmacology of hypertension; (2) the therapeutic results obtained with the pure alkaloid reserpine as compared to other extracts of Rauwolfia; (3) the results obtained with reserpine when used alone or compared to its use with other antihypertensive agents; and (4) parenteral use of reserpine.

The Clinical Use of Intramuscular Trypsin

IRVING INNERFIELD and ALFRED SCHWARZ, Jewish Memorial Hospital, New York.

Experimental studies with I^{131}-tagged human serum albumin show that intramuscular trypsin causes restoration of blood flow in ischemic tissue. Reestablishment of circulation in acutely injured tissue provides the vascular, metabolic, phagocytic, and immunologic milieu necessary for rapid repair and healing. The exhibit summarizes clinical results in acute thrombophlebitis, chronic recurrent thrombophlebitis, diabetic cellulitis, and leg ulcers.

Treatment of Essential Hypertension with the Hydrogenated Alkaloids of Ergot

RAYMOND F. GRENFELL, Jackson, Miss.

The ambulatory treatment of 73 patients with essential hypertension over a three year period using the hydrogenated alkaloids of ergot parenterally is presented. The absence of toxicity, the freedom from side-effects, and the disappearance of symptoms are demonstrated. A practical dosage schedule is described without the development of tolerance to the drug.

Cardiovascular Strain in Electrotherapy for Psychiatric Illness

WILLIAM HALL LEWIS JR., D. JEANNE RICHARDSON, and LAWRENCE H. GAHAGAN, New York.

This exhibit presents (1) the importance of the problem of cardiovascular strain in psychiatric electrotherapy, especially in the treatment of elderly patients and those with cardiovascular disease; (2) the manifestations of such strain in treatment as shown principally by continuous electrocardiography and frequent blood pressure determinations; (3) the technique for modifying electrotherapy by means of thiamylal plus succinylcholine plus controlled respiration with 100% oxygen; and (4) the effects of atropine, quinidine, ephedrine, and chlorpromazine in the alleviation of cardiovascular strain.

Pulmonary Hypertension

REUBEN ROCHKIND and F. A. HERNANDEZ, National Children's Cardiac Hospital, Miami, Fla.

The exhibit gives a descriptive summary of pulmonary hypertension in congenital heart disease, mitral stenosis, and "primary" pulmonary hypertension. This is presented by intracardiac pressure tracings, roentgenograms, and other descriptive data on glass panels in an illuminated cabinet.

Chlorpromazine in the Management of Pain

MAX S. SADOVE, RAYMOND F. ROSE, REUBEN C. BALAGOT, and ROSAURO MA. REYES, University of Illinois College of Medicine, Chicago.

The exhibit summarizes laboratory and clinical experience using chlorpromazine to augment the action of narcotics, sedatives, anesthetics, and various other drugs. It includes data derived from (1) animal studies which show that the drug intensifies and prolongs the action of CNS depressants, and (2) clinical studies which show that chlorpromazine, plus narcotics, provides satisfactory analgesia in the management of pain inadequately relieved by narcotics alone. In addition, a summary is given of the chemistry, pharmacology, and possible mode of action of chlorpromazine in analgesia.

The Diagnosis and Treatment of Segmental Arteriosclerosis Obliterans

F. A. LEFEVRE, V. G. DEWOLFE, and A. W. HUMPHRIES, Cleveland Clinic, Cleveland.

This exhibit stresses the importance of the diagnosis of segmental arterial disease involving the abdominal aorta and the arteries of the lower extremities. The diagnosis of this condition can only be made by adequate angiographic study. The technique of complete angiographic survey is described. The exhibit also demonstrates the process of preparing arteries for grafting, the grafting procedure itself, and the results of grafting in our particular series. Aortograms before and after grafting and the gross specimens are also demonstrated.

A Trial Vaccine for Poliomyelitis

HART E. VAN RIPER, National Foundation for Infantile Paralysis, New York.

The exhibit will present material on research leading to the development of a vaccine, minimal standards for production of a vaccine, and how the results of the vaccine trials will be evaluated.

Differential Diagnosis in Pulmonary Disease

JULIUS L. WILSON, National Tuberculosis Association and American Trudeau Society, New York.

A display utilizing chest x-ray plates, drawings, and text emphasizes the importance of employing a multiplicity of diagnostic tests in making a diagnosis of pulmonary disease. An audience participation device permits physicians to study six chest x-ray plates, each showing a different type of pathology. Physicians may attempt to make diagnosis on the basis of the x-rays, then check their diagnoses with actual case histories which an electrical device brings into view.

A New Punch Biopsy Technique for Diagnosis of Joint Diseases

H. F. Polley, W. H. Bickel, and M. B. Dockerty, Mayo Clinic and Mayo Foundation, Rochester, Minn.

An instrument has been devised for punch biopsy of synovial membrane. The procedure is relatively easy, can be performed on ambulatory or hospitalized patients with either local or general anesthesia, and avoids the morbidity incident to examination by arthrotomy. Diagnosis of a joint disease has been facilitated by use of this punch biopsy procedure. Single or repeated examinations have been performed on 275 patients. This exhibit presents (1) anatomic models, photographs, and descriptions of this technique of synovial biopsy; (2) case reports, photographs, roentgenograms and photomicrographs illustrating the value of punch biopsy technique in the differential diagnosis of articular disease; and (3) comparison of synovial specimens obtained by punch biopsy and arthrotomy, the usefulness of a punch biopsy technique in the study of synovial pathology, and evaluation of therapy of various rheumatic diseases with articular manifestations.

Distribution of Lipids in Serum and in Connective Tissue

R. J. Boucek, Nancy L. Noble, George T. Lewis, Gus G. Casten, and Kung-Ying T. Kao, Miami Heart Institute and University of Miami School of Medicine, Coral Gables, Fla.

Connective tissue is the chief structure of the intima. Atherosclerotic changes occur in the intimal area of the arteries. The conjugated lipids of the serum and of connective tissue have been determined in rats, rabbits, and humans. Total fatty acid, total phospholipid and choline-containing phospholipid, total cholesterol and cholesterol esters, and the various amino acids have been measured in each of the fractions of the serum and tissue lipoprotein under standard laboratory conditions in the rat and rabbit. The effects of exogenous lipid and cholesterol feeding in the rabbit will be presented. The purpose of the exhibit is to depict the lipid profile of connective tissue, its divergence from serum values on occasions, and the influences of various tested substances upon it.

Recent Advances in the Treatment of Intestinal Obstruction

John W. Devine and John W. Devine Jr., Lynchburg, Va.

Recent advances in the diagnosis and treatment of intestinal obstruction are shown, with the improvements in decompression tubes and newer methods of duodenal intubation. Advances in fluid replacement with special intravenous fluids and by replacing the fluid removed by proctolysis are included and improvements in surgical technique illustrated.

Progress in the Clinical Investigation of a Carbonic Anhydrase Inhibitor

James D. Gallagher, Christopher H. Demos, and Rutledge W. Howard, Lederle Laboratories Division, American Cyanamid Company, Pearl River, N. Y.

Carbonic anhydrase is found in significant amounts in the kidneys, eyes, brain, stomach, pancreas, and red blood cells. Inhibition of this enzyme may be brought about by utilizing a compound called acetazoleamide. The result is renal loss of HCO_3 ion, which carries out sodium, water, and potassium. Diuresis and alkalinization of the urine thus occur. The metabolic changes brought about have been helpful in treating such conditions as glaucoma, epilepsy, and edema due to congestive heart failure. Because of the ubiquitous nature of carbonic anhydrase, there are indications that therapeutic benefit may also be obtained in such conditions as the edema of pregnancy, premenstrual tension, gout, conditions associated with increased intracranial pressure, emphysema, edema due to hormonal imbalance, and the postalcoholic state.

Hydrocortisone—Intra-Articular Use in Rheumatic Diseases

Irving L. Sperling, Newark, N. J.

The technique and indications for intra-articular administration of hydrocortisone are illustrated pictorially and graphically. Plaster models of the joints are used to further illustrate the technique of the various types of injections. The basis for this form of therapy and the results of its use in 460 patients receiving a total of 2,250 injections are demonstrated.

Osteoarthritis–Rheumatoid Arthritis: Diagnosis and Practical Treatment

Dwight C. Ensign and John W. Sigler, Henry Ford Hospital, Detroit, Mich.

The exhibit has as its main purpose the stimulation of interest in earlier diagnosis and treatment of arthritis. It outlines methods found to be of practical value in the two common types of chronic arthritis: osteoarthritis (degenerative joint disease, hypertrophic arthritis), and rheumatoid arthritis (atrophic arthritis). The importance of accurate diagnosis is emphasized. A step-by-step program of therapy is outlined for each of the two major types of chronic arthritis.

The Symptoms of Diabetes Mellitus

James M. Moss, Georgetown University School of Medicine, Washington, D. C.

Diabetes affects every organ in the body to cause a great diversity of symptoms. A poster for each of the medical specialties illustrating the symptoms that might cause a patient with undiagnosed diabetes to first consult a physician will be shown.

The Conservative Management of Diabetic Foot Complications

William L. Lowrie, W. Earl Redfern, and Brock E. Brush, Henry Ford Hospital, Detroit.

Most foot complications are preventable by proper care of the feet. Amputation of an arteriosclerotic extremity for infection or gangrene adds stress to the opposite foot, which usually has an equal degree of circulatory impairment. By controlling infection, antibiotics permit a safe trial of conservative therapy. The results even in cases in which amputation had been advised have been very encouraging. The progress under conservative therapy of gangrene, cellulitis, and suppurative foot lesions is shown in color. The detailed plan of management is given.

Primary Hyperparathyroidism

R. W. Schneider and L. J. McCormack, Cleveland Clinic, Cleveland.

The exhibit emphasizes the diagnosis and treatment of primary hyperparathyroidism, a curable disease. It includes various clinical pictures seen in the disease as well as the pathology. Some brief reference is made to its differentiation from secondary hyperparathyroidism. Emphasis is placed on the clinical, laboratory, and roentgen features of the disease.

Clinical and Roentgenological Studies of the Effect of Anticholinergic Agents on the Gastrointestinal Tract.

I. Richard Schwartz, Ernest Lehman, J. M. Seibel, and R. Ostrove, Kings County Hospital and Kings County Gastrointestinal Clinic, Brooklyn, N. Y.

Serial roentgenograms of stomach, small bowel, and large bowel of patients with peptic ulcer, and other gastrointestinal conditions with varying degrees of hypermotility before and after administration of anticholinergic drugs are shown. X-rays demonstrate the use of anticholinergics intramuscularly to inhibit hypermotility and spasticity in duodenal bulb, permitting excellent visualization of bulb as well as the rapid healing of duodenal ulcer with anticholinergic drugs. Summaries of case histories accompany illustrative films and provide information concerning effective dosage, side-effects, and clinical results, with a report on over 300 cases followed for three years. Effect of the drugs on gastric secretion is illustrated, with indications for use in acute pancreatitis, intractable ulcer pain, and other gastrointestinal conditions.

A Simple Blood Prothrombin Test for the Control of Dicumarol Therapy

Benjamin Manchester, George Washington University School of Medicine, Washington, D. C.

The exhibit presents a simple blood prothrombin test for bedside use in the control of anticoagulant therapy. Charts and graphs show the comparative results of the Quick, Link-Shapiro, and the present bedside prothrombin test, as well as the method of preparation of thromboplastin and the technique of performing the test. More than 12,000 prothrombin tests have been performed on 712 subjects during the past seven years. The method is simple, accurate, and practical. It has made anticoagulant therapy possible for patients at home as well as in the hospital.

Antibiotics in Amebiasis

Gordon McHardy, Louisiana State University School of Medicine and Browne-McHardy Clinic, New Orleans.

The exhibit presents a review of diagnostic and therapeutic information on amebiasis and a detailed review of the status of antibiotics as intestinal amebacides, with a statistical conclusion of comparative efficacy of the preparations already tried and those at present under study.

Ambulatory Continuous Drip Method in the Treatment of Peptic Ulcer

Frederick Steigmann and Edwin Goldberg, Cook County Hospital, Chicago

Drawings showing the importance of gastric acidity in the genesis and persistence of peptic ulcer and charts and graphs showing the incomplete and short duration of neutralization of the gastric acidity by presently used antacids are presented. The value of the original Winkelstein drip method in more complete and prolonged neutralization of gastric acidity in bed patients is discussed and a new method of ambulatory continuous drip therapy demonstrated and its clinical application presented.

Evaluation of Drugs in the Treatment of Peptic Ulcer—A Method of Study

J. M. Ruffin, Durham, N. C., J. S. Atwater, Atlanta, Ga., D. Cayer, Winston-Salem, N. C., and Benjamin Oren, Miami, Fla.

This exhibit gives a detailed description of a blind controlled study. Second, applying these principles, the comparative results obtained with placebos, atropine, banthine, and pathilon are shown, and, finally, the effectiveness of anticholinergic drugs given parenterally in the relief of ulcer pain and the healing of ulcer are presented. The exhibit consists of tables, charts, x-rays, and diagrammatic illustrations.

Rapid Nonsurgical Choledochography and Cholecystography

J. Gershon-Cohen, D. M. Sklaroff, and H. J. Tumen, Albert Einstein Medical Center, Philadelphia.

The exhibit comprises roentgenographic results with cholografin in the demonstration of residual stones in the common duct after cholecystectomy and also the use of cholografin for rapid routine intravenous cholecystography.

Dietary Versus Medicinal Therapy of Laennec's Cirrhosis—A Comparison Study Based on Liver Biopsy and Liver Function Tests in Alcoholics

Thaddeus D. Labecki and Carroll L. Busby, Mississippi State Board of Health and Mississippi State Hospital, Jackson, Miss.

Transparencies made from photomicrographs are shown, and a brief description of the rationale of the study is presented, with the type of dietary and medicinal approach (lipotropic therapy) and the results obtained.

Preventive and Social Aspects of Seasonal Inhalant Allergy

Oren C. Durham, Abbott Laboratories, North Chicago, Ill., and George H. Berryman, University of Illinois College of Medicine, Chicago.

Recent research on the personal and social problems of seasonal inhalant allergy is considered from the viewpoint of the practicing physician and public health worker. Recognition of sources of air contaminants, as well as the practical application of the principles of sanitation, quarantine, and immunization, are presented statistically and graphically. Concrete examples are cited. The authors attempt to answer such questions as: How accurate are pollen counts? How do they help the doctor? How effective are pollen filters? Is a change of residence ever advisable for seasonal allergies? Is local ragweed control possible? Is it a community responsibility? What agents are available for treatment to maintain the effectiveness of the patient in family, social, and occupational spheres?

Aneurysms and Thrombo-Obliterative Disease of the Aorta—Surgical Considerations

Michael E. De Bakey, Denton A. Cooley, and Oscar Creech Jr., Baylor University College of Medicine and Veterans Administration, Jefferson Davis, and Methodist hospitals, Houston, Texas.

The exhibit depicts the diagnostic features, surgical treatment, and gross and microscopic characteristics of aneurysms and thrombo-obliterative disease of the aorta. Illustrative cases of thoracic and abdominal aortic aneurysms and thrombo-obliterative disease, and the results of treatment are presented.

Anatomic and Physiological Problems in the Treatment of Atrial Septal Defect

John W. Kirklin, H. J. C. Swan, H. B. Burchell, R. L. Parker, J. E. Edwards, E. H. Wood, André Bruwer, J. W. DuShane, and A. H. Bulbulian, Mayo Clinic and Mayo Foundation, Rochester, Minn.

Atrial septal defect is a congenital anomaly giving rise to serious physiological phenomena and ultimately to heart failure. Considerable variation exists in the location of these defects in the atrial septum and thus in the physiological effects produced. In some cases, there is an associated true anomalous pulmonary venous connection. The anatomic features of atrial septal defect and these variations are reviewed and illustrated by models and diagrams. The clinical features and the roentgenologic and physiological studies related to the diagnosis are illustrated by appropriate case histories, photographs, and models. The techniques and results of surgical closure are illustrated by appropriate models.

Intracardiac Surgery with the Aid of Artificial Operative Tunnels

W. K. Swann, J. T. Bradsher, and J. A. Rodriguez, Knoxville, Tenn.

The exhibit demonstrates by means of drawings and models the use of artificial operative tunnels as an aid in intracardiac surgery. The tunnels are made from fabric and plastic, and the same operative principle is employed as is normally used to approach the mitral valve by way of the normal auricular appendage. The plastic tunnels are utilized for operative maneuver in areas of the heart where tissue such as an auricular appendage is not available. The method has been used successfully in experimental animals and in human patients. It allows a bloodless approach to all the valves and septa within the heart. The method has been found particularly useful and practical in the transortic approach to the stenosed aortic valve.

Influence of Anesthetic Drugs and Techniques on Cerebrospinal Fluid Pressure

William K. Nowill, Byron M. Bloor, and Charles R. Stephen, Duke University School of Medicine and Hospital, Durham, N. C.

The exhibit describes apparatus used to determine spinal fluid pressure, the factors which produce increased spinal fluid pressure during surgery, and methods to present increased spinal fluid pressure.

Nailing the Tibia Fractures

William B. Lewis, United States Air Force Hospital, Scott Air Force Base, Belleville, Ill.

This exhibit discusses the preoperative and operative techniques used in nailing tibia fractures, the convalescence treatment, and variations and contraindications. It includes photographs and informational material depicting the procedures involved in nailing tibia fractures.

Ulcerative Colitis and Familial Polyposis—Surgical Management and Value of One-Stage Total Colectomy

Louis T. Palumbo and George M. Rugtiv, Veterans Administration Hospital, Des Moines, Iowa.

The exhibit presents a newer concept to the surgical approach in the management of patients with chronic ulcerative colitis and familial polyposis. It portrays the indications for surgery, the incidence of carcinoma, complications of the disease, and the roentgenographic findings. It presents the various type of surgical procedures performed and the method and care of the ileostomy as well as the comparative mortality and morbidity rates of the various surgical procedures. The advantages of a one-stage total colectomy (including the abdominoperineal portion) with or without a preliminary ileostomy are presented, and the technique of this procedure is portrayed.

Fenestration Operation—*Analysis of Five Hundred Cases*

J. BROWN FARRIOR, RICHARD A. BAGBY, and ROBERTO G. IGLESIAS, Tampa Municipal Hospital, Tampa, Fla.

The exhibit consists of a series of Kodachrome transparencies demonstrating the steps in surgical technique which insure lasting restoration of hearing through the fenestration operation and a series of charts which describe the anticipated results in fenestration surgery and analyze the primary and lasting results upon experience in the first 500 fenestrations..

Observations of the Duct System and Arterial Supply of the Pancreas

WILLIAM P. KLEITSCH, Creighton University School of Medicine and Veterans Administration Hospital, Omaha.

The exhibit is a report of an original investigation on the ductal system and arterial supply of the pancreas, which has never before been demonstrated. It consists of color photographs and black and white drawings of dissections of the pancreas injected by a modification of the method of Opie and cleared with a modification of the method of Spalteholz, thereby clearly demonstrating the anatomy of the pancreatic ducts. Drawings and charts are included to graphically illustrate the findings, and certain important surgical conclusions are drawn from this work. Actual representative specimens will be available for examination also.

Tube Feeding

JAMES BARRON and L. S. FALLIS, Henry Ford Hospital, Detroit.

The methods of preparing liquefied natural foods are shown, and small feeding pumps are demonstrated. Emphasis is placed on the practical aspects for use in the home and in small hospitals. Natural whole foods are inexpensive and quite well tolerated. The tubes used are inexpensive and easily inserted by the use of techniques to be demonstrated.

Sterile Draping Procedures for Extremity Surgery

MURRAY E. GIBBENS and THOMAS J. COLEMAN, Veterans Administration Hospital, Denver.

The exhibit consists of photographic charts showing sterile draping procedures for extremity surgery. Additional information will be available for distribution.

Normal and Abnormal Roentgenograms of the Cervical Spine

B. F. BOYLSTON and ROLAND CARROLL, Baylor University College of Medicine, Houston, Texas.

The various landmarks, e. g., pedicules, lamina, etc., are identified by markers in the different projections taken of the cervical spine routinely. Overlapping shadows are pointed out with markers. Obliques in flexion and extension demonstrate the lateral articulations and tear of the posterior ligaments.

Surgical Treatment of Varicose Veins by Stripping Method

T. T. MYERS, K. A. LOFGREN, and L. R. SMITH, Mayo Clinic and Mayo Foundation, Rochester, Minn.

Varicose veins of the lower extremity are progressive, recurring, and disabling. They have not responded satisfactorily to minor surgery and injection therapy. The most satisfactory long-term control has been accomplished by major surgery, which consists of extensive removal of the veins by stripping and direct dissection. This exhibit consists of (1) models, diagrams, and photographs explaining the technique of stripping the long saphenous and the short saphenous veins; (2) illustrations of the important venous patterns from surgical standpoint; (3) simplified diagnostic tests and venous pressure studies before and after surgery; and (4) graphs showing the results of partial stripping and complete stripping performed on 1,189 lower extremities.

Treatment of Burns

CURTIS P. ARTZ, HARRY S. SOROFF, ALVIN W. BRONWELL, ERIC REISS, and JOHN H. DAVIS, Surgical Research Unit, Brooke Army Medical Center, Fort Sam Houston, Texas.

The exhibit outlines several phases in the management of burns. It points out the common characteristics, fluid and electrolyte shifts, local and systemic early treatment, and a comparison of exposure and occlusive dressing local care techniques, as well as information on transporting the burned and on grafting techniques. The complications encountered in the management of 750 burnt patients treated at the Surgical Research Unit during the past four years are outlined.

Transfusion Equipment Around the World

JOHN B. ROSS, Jacksonville Blood Bank, Jacksonville, Fla.

In this exhibit a series of plaques is shown, each holding representative blood donor sets, blood bottles or bags, and blood transfusion sets from 10 countries of the world: Canada, Mexico, Holland, England, France, Sweden, Greece, Philippines, United States, and Germany.

Mediastinal Tumors

GEORGE P. ROSEMOND, W. EMORY BURNETT, H. TAYLOR CASWELL, R. ROBERT TYSON, and ROBERT M. BUCHER, Temple University School of Medicine and Hospital, Philadelphia.

This is a pictorial exhibit of the common and uncommon mediastinal tumors. Cards give a brief history of a case with photographs of a preoperative x-ray, of the operative specimen, and a photomicrograph of the microscopic slide. These are the unusual lesions and in some instances are impossible to diagnose preoperatively. For the more common lesions, a device makes it possible for the viewer to make his own diagnosis from the history and x-ray photograph, then turn the page to see the photograph of the specimen, photomicrograph, and the diagnosis to check it with his own. Other diagrammatic drawings in color of the mediastinum show the usual locations of the various lesions.

Medical Complications of Pregnancy

FREDERICK H. FALLS, University of Illinois College of Medicine, and CHARLOTTE S. HOLT, Illinois State Department of Public Health, Chicago

This exhibit depicts various medical complications of pregnancy occurring in the gastrointestinal, respiratory, circulatory, nervous, and genitourinary systems, together with the commoner blood dyscrasias. Sculptures show the anatomic changes seen in the endocrine glands during pregnancy and depict various endocrine dystrophies as they affect the pregnant woman. Special attention is called to the importance of diabetes, syphilis, and gonorrhea as they affect pregnancy.

Trichomonas Vaginalis Infections

CARL HENRY DAVIS and C. G. GRAND, Miami, Fla.

Charts and photographs show the nature of infection and problems in treatment. Synergistic action of balanced blend of detergent, chelating, and wetting agents, recently discovered, will be demonstrated with data on experimental and clinical studies.

Treatment of Acute Bartholin Abscess and Bartholin Cyst

EARLE M. WILDER, Sinai Hospital, Baltimore

An office procedure describing a simple method of treating Bartholin cyst and abscess is given. This method maintains the function of the gland. Methods in practice require hospitalization, and the complications are often serious. The technique advocated by the author is simple, and the results are excellent.

New *Concepts in Diagnosis and Treatment of Toxemia of Pregnancy*

FRANK A. FINNERTY JR., Georgetown University Medical Center, Washington, D. C.

Recent observations on 650 patients followed in the Toxemia Clinic of the District of Columbia General Hospital have shown that hypertensive vascular disease and pyelonephritis frequently masquerade as toxemia of pregnancy. Studies by the author have shown that differentiation between pure toxemia of pregnancy and hypertensive vascular disease is apparent by examination of the retinas. Thirty patients with albuminuria and edema were found to have pyelonephritis documented by microscopic urinalysis and urine culture. Therapy with appropriate antibiotics promptly resulted in clearing of the toxemia in these cases. Though 95% of the patients referred to the clinic by the obstetricians were originally given a diagnosis of toxemia, only 14% actually had toxemia by our criteria. The indications and contraindications of hypotensive therapy in early and late toxemias, the proper selection of agents, and the indications for hospitalization and/or induction of labor will be presented in light of the above.

Strokes—A Short Course in Diagnosis and Treatment

KEITH W. SHELDON, Cleveland.

This is a demand for an enlighted approach toward one of the greatest offenders in the tragic comedy of errors which plagues the golden years from 30 to 60. The exhibit depicts representative cases of patients whose initial medical diagnosis was "a stroke." The often unrecognized fact that "a stroke" is not a diagnosis is stressed. All patients need accurate neurological evaluation, and some may need specific tests, in order to arrive at the proper diagnosis. Many lives can be saved and many disabilities reduced by proper management of these cases which are so commonly encountered in the practice of medicine.

The Treatment of Convulsive Disorders

SAMUEL LIVINGSTON, Johns Hopkins Hospital, Baltimore.

The data presented in this exhibit are based on follow-up studies made on approximately 7,000 children who suffered with convulsive disorders (epilepsy, breath-holding spells, and febrile convulsions). Most of these children have been observed for a prolonged period of time, many for as long as 15 to 20 years.

Twelve Months' Experience with Reserpine in the Treatment of Mentally Ill Patients

ROBERT H. NOCE and DAVID B. WILLIAMS, Modesto State Hospital, Modesto, Calif., and WALTER RAPAPORT, Sacramento, Calif.

Case histories, photographs, and charts will show how reserpine has benefited well over 100 mentally ill patients. Selection of patients, methods of treatment, and objective measurement of improvement will be demonstrated.

Progress in Parkinsonism

LEWIS J. DOSHAY and ADOLFO ZIER, Columbia-Presbyterian Medical Center, New York.

The subject of Parkinson's disease is presented in its broadest aspects. The symptomatology, etiology, pathology, and differential diagnosis of the three recognized types of parkinsonism: postencephalitic, idiopathic, and arteriosclerotic, are outlined in detail. The progress in drug therapy, from potato plant to synthetics, appears in classified and descriptive form under headings of chemical structure, posology, method of administration, effects, side-reactions, and clinical impressions. Five new drugs, cycrimine, benztropine, ethopropazine, chlorpromazine, and reserpine, have been added to the Parkinson armamentarium during the past year, and comments on each will appear in the exhibit. Due attention will be afforded to items of miscellaneous therapy, psychotherapy, physical therapy, surgical therapy, prognosis, and the future goals and needs in Parkinsonism.

Progress in the Treatment of Epilepsy—Holistic Management of the Epileptic

FREDERIC T. ZIMMERMAN and BESSIE B. BURGEMEISTER, the Neurological Institute, Columbia-Presbyterian Medical Center, New York.

The exhibit offers a visual presentation of diagnostic and therapeutic techniques used in the modern treatment of epilepsy, including standard and newer drug techniques with data on some experimental drugs, material on the emotional and intellectual makeup of the epileptic with appropriate charts on the intellectual levels of various types of epileptics, Rorschach findings on several hundred epileptics, as well as evidence suggesting a possible correlation between certain behavior disorders in children and their electroencephalographic findings. Methods and results of treatment are given in the latter group, which responds well to pharmacological therapy.

Cerebral Palsy—A Challenge to Your Town and the Nation

HENRY J. LINDNER JR., United Cerebral Palsy Associations, New York.

This exhibit shows the medical and professional approach to cerebral palsy as a community and national health problem. It includes the incidence of cerebral palsy and problems posed in terms of the individual, the approach to these problems through a program of national research as well as a workshop and training program in the medical and allied professional fields, and the approach at a community level, pointing out methods of incorporating available community resources and their mobilization in attacking the problem of cerebral palsy.

New Portable Exhibits for School Health and Patient Education

BRUNO GEBHARD, Cleveland Health Museum, Cleveland.

The exhibits serve a double purpose, first as demonstration units for health education in schools and second as aids in health examinations such as audiometry and vision tests. The titles of exhibits shown are "As Others See You" (grooming), "Foods Can Be Fun" (nutrition), "How Blood Travels" (circulatory and respiratory systems), "How Food Travels" (digestive system), "How We Hear" (ear), "Rest and Sleep," "Straight and Tall" (posture), "Teeth Are to Keep" (dental hygiene), and "Why We Need Glasses" (eye). As an introduction to family life education, suitcase exhibits for classroom use include "Travel of Egg from Ovary to Nidation," "Uterus with Embryo," "Fraternal and Identical Twins," "Triptych," and "Embryos in Utero."

Marrow Aspiration Studies—Clinical Evaluation of Bone Marrow Spreads and Bone Marrow Sections

HARRY AGRESS, HARRY N. OFFIELD, and ANN LOCKHART, Veterans Administration Hospital and Jewish Hospital, St. Louis.

A comparative study of bone marrow spreads and sections in 1,187 patients with a wide variety of conditions is presented. The clinical value of marrow aspiration, in general, is charted. An evaluation of the spread technique as compared with the section technique is included in the exhibit. Selected color photomicrographs are displayed in this exhibit, illustrating points of clinical interest.

Abnormal Human Hemoglobin—Clinical, Hematological, and Electrophoretic Correlation

J. D. BATTLE JR., JAMES S. HEWLETT, and LENA LEWIS, Cleveland Clinic, Cleveland.

The existence of four inherited abnormal human hemoglobins, sickle (S), C,D,E, and 2 normal hemoglobins, adult (A) and fetal (F), has been proved. These are identified by Tiselius or paper electrophoresis. Hematological disorders due to one or more of the abnormal hemoglobins are recognized and range from minimal erythrocytic abnormalities to severe chronic hemolytic anemia. These disorders are not rare but are more frequent in the Negro. The exhibit correlates clinical features, hematological data, genetic patterns, photomicrographs of blood films, and Tiselius and paper electrophoretic studies of abnormal hemoglobin disease. Salient observations leading the physician to suspect these diseases are emphasized. Recognition of these disorders is important because specific antianemic therapy and splenectomy are without benefit.

The Medical Examiner System in a Medium-Sized, Semi-Urban County

A. E. CRONKITE, Office of Broward County Medical Examiner, Fort Lauderdale, Fla. and J. H. MICKLEY, Hollywood, Fla.

Posters illustrate the organization, duties, and statistical data concerning activities and costs of operation since establishment of this office in December, 1951. Kodachrome photographs show representative cases investigated.

Clinical Features and Chemical Morphology of Semen and Some of Its Variations

Heron O. Singher, Ortho Research Foundation, Raritan, N. J., and Edward T. Tyler, Los Angeles County Harbor General Hospital, Los Angeles.

The exhibit describes the findings of comprehensive surveys initiated for the purpose of establishing normal values for human semen and providing criteria for evaluating therapeutic measures. The findings presented include the results of studies of about 3,000 semen specimens obtained from both fertile and infertile men. The presentation includes (1) data on the variation in protein composition of seminal plasma as determined electrophoretically; (2) data on amino acid variation in seminal fluids as identified mainly by chromatographic methods; (3) an outline of relationships of the parts of the male generative tract concerned in the formation of certain constituents of the semen; and (4) a summary of the clinical findings obtained. In the course of this study uterine contractants in semen were discovered and are described in the exhibit.

American Association of Blood Banks

Oscar B. Hunter Jr., Washington, D. C.

This exhibit is designed to show the doctor, technologist, nurse, and researcher as well as administrative personnel of hospitals and blood banks how a good blood bank can be set up, what it can accomplish, and how the association can be of assistance in the setting up and improvement of the blood bank activities. An outline of a national blood bank clearing house will also be displayed.

The Urinary Albumin Excretion Test in Differentiation of Renal Disorders—The Clinical Significance of Chronic Asymptomatic Albuminuria

S. Edward King, David Baldwin, and Saul B. Gilson, U. S. Army Hospital, Fort Jay, New York.

Alterations in albumin (protein) excretion in sequential urinary specimens collected after rest and activity have been applied to the study of a wide variety of renal disorders in about 4,500 ambulatory asymptomatic persons. Standard conditions which included moderate hydropenia were imposed. Cases of albuminuria were classified into constant (continuous) and inconstant (intermittent and orthostatic). Albuminuria in all specimens at rest and activity (constant) represents significant, usually chronic, renal disease. In over 90% of cases this pattern was reduplicated on reexamination, in some instances after three years. Most of these cases (about 500) were chronic glomerulonephritis. Previous history or evidence of renal disease was unusual. Too little is known concerning the evolution of most cases of chronic intermittent and orthostatic proteinuria to justify definite conclusions. Evidence is submitted casting doubt on the assumption that these cases are usually benign.

Histology and Mechanics of the Scalp

Hans Elias and Adolph M. Brown, Chicago Medical School, Chicago.

Thickness of scalp is closely related to hair growth. Five regions of each of 30 scalps, normal and showing various degrees of patterned baldness, are correlated and analyzed. Mechanical stress of the galea and its influence on baldness are studied. The mechanical properties of the scalp are correlated with the arrangement of the connective tissue fibers in three layers of the scalp.

Hydrocortisone Topical Ointment in Dermatology

James Q. Gant Jr., Washington, D. C.

The exhibit presents Kodachrome transparencies of skin disease treated with hydrocortisone ointment with before and after pictures.

Medical Education

Edward L. Turner, E. H. Leveroos, and Carl T. Heinze, Council on Medical Education and Hospitals, American Medical Association, Chicago.

The exhibit of the Council on Medical Education and Hospitals displays data on medical education, registration and approval of hospitals, training of interns and resident physicians, technical hospital personnel, and medical licensure. Data are included pertaining to lists of approved medical schools, hospitals approved for internships and residencies, and approved technical schools.

Health Hazards of Solvents Frequently Encountered in Industry and in the Home

Clark D. Bridges and Carl M. Peterson, Council on Industrial Health, American Medical Association, Chicago.

The exhibit shows that some disabilities have their origins in unsuspected solvents. Various solvents are discussed, with emphasis on the maximum allowable concentrations for continuous and repeated exposure, together with clinical symptoms, treatment, and prevention. Carbon tetrachloride, often considered safe, is given special attention.

Ascerola (Puerto Rican Cherry)—A Rich Natural Source of Vitamin C for Infant Feeding

Conrado F. Asenjo, University of Puerto Rico School of Medicine and Agricultural Experiment Station, San Juan, P. R.

The exhibit shows a tree of the Puerto Rican cherry. Charts on current work and reprints of the published papers on the subject are included. The fresh fruit, jams, jelly, and juice in addition to other items will be displayed. This is a cooperative project.

Audiology and Speech Correction Center

James P. Albrite, Walter Reed Army Hospital, Washington, D. C.

The functions of the Audiology and Speech Correction Center are shown pictorially: (1) speech pathology, therapy is provided for many types of speech problems; (2) aural rehabilitation, techniques of evaluating hearing loss, the fitting of hearing aids, and auditory rehabilitation are pictured, and (3) special testing techniques and research, some of the research projects and testing methods using specialized equipment are shown.

Rehabilitation for Independence

Lawrence J. Linck and Jayne Shover, National Society for Crippled Children and Adults, Inc., Chicago, and Ezelle Kerrigan, Crippled Children's Society, Miami, Fla.

Men, women, and children representing a variety of disabilities will show how adaptations in the home and modifications on the job help them to achieve independence in activities of daily living. Some of these modifications are built into the exhibit background, and special equipment and aids will be featured.

Malingering and Rehabilitation

Harold Lefkoe and Albert A. Martucci, Einstein Medical Center and Philadelphia General Hospital, Philadelphia.

Illustrations show how the malingerer can be weeded out from the patient with true basis for complaints. The exhibit includes shoulder, back, and hand problems.

Do You Prescribe Therapeutic Diets for Patients with Gastrointestinal Diseases?

Ruth M. Yakel, American Dietetic Association, Chicago.

Food models illustrate three palatable, simple, and economical meals which provide a high protein intake, recommended diet therapy for gastrointestinal diseases. The total protein value of the three meals shown, breakfast, lunch, and dinner, is approximately 151 gm. The leaflet which accompanies the exhibit presents a basic meal pattern which can be adapted to provide from 100 to 150 gm. of protein daily.

Breath Sounds on Tape

VERNON M. PADGETT, U. S. Department of Health, Education, and Welfare, Public Health Service, Washington, D. C.

The exhibit demonstrates a new professional training aid consisting of a tape recording of normal and abnormal chest sounds and accompanying x-ray films. Suitable for use in medical schools, hospital conferences, and professional meetings, "Breath Sounds on Tape" is a permanent, readily available refresher and teaching aid for physicians, medical students, interns, and residents.

Heart Sounds on Tape

CLARK W. MANGUN JR., U. S. Department of Health, Education, and Welfare, Public Health Service, Washington, D. C.

Listeners may hear the sounds of normal and abnormal hearts recorded on tape. Hospital medical staffs, health agencies, and groups of physicians may borrow these tape recordings, as well as the high fidelity playback equipment. Information concerning the loan of these and other professional refresher materials on heart disease is available.

Gastric Cancer

GEORGE T. PACK, GORDON P. MCNEER, KATHLEEN E. ROBERTS, T. ORTEGA, T. R. RANDALL, and DOUGLAS A. SUNDERLAND, Memorial Center, New York.

The exhibit covers three phases in the treatment of cancer of the stomach: (1) pathological studies based on autopsy and investigation of specially cleared surgical specimens for lymph node distribution of metastasis, from which certain conclusions are drawn regarding surgical technique; (2) metabolic changes in humans after total gastrectomy; and (3) end-results of treatment.

Blood Sugar Screening for Diabetes in the Physician's Office—Chronic Disease Program

ARNOLD B. KURLANDER, Department of Health, Education, and Welfare, Public Health Service, Washington, D. C.

A continuous three-dimensional, color motion picture with narration portrays blood sugar screening for diabetes in the physician's office, using the Wilkerson-Heftmann method, with individual screens and earphones.

Neuropathology of Metastatic Brain Tumor

JOHN A. WAGNER and URSULA T. SLAGER, University of Maryland School of Medicine, Baltimore

The incidence and source of metastatic brain neoplasm is presented, along with charts and drawings relating to method of spread to brain, types of neoplasms seen, and percentage distribution. The gross and microscopic effects on the brain are shown by photographs, photomicrographs, and drawings. Typical and unusual types of brain metastases are presented with correlative history and clinical course. The clinical problem of solitary brain metastasis is considered in light of the above.

Office Procedures in Cytology—Abrasive versus Exfoliative Cytology

H. E. NIEBURGS, Cytology Center, Beth El Hospital, New York.

The quality of specimens obtained for cytological examination depends on the methods employed. There are many factors which if neglected may determine whether the right type of cell is present in the specimen. Furthermore, even if the method should be adequate in obtaining the cells from a particular site, various techniques or their incorrect use may be responsible for marked differences in the microscopic appearance of the cells. For the purpose of this presentation, demonstration of the morphology of cells is kept to a minimum while the main emphasis is placed on the techniques employed for obtaining specimens from the vaginal mucosa, endocervix, endometrium, prostate, bladder, kidneys, stomach, lungs, and breast. A variety of new abrasive instruments will be shown.

The Value of X-Ray Studies in Breast Diagnosis (Too Long Neglected)

HELEN INGLEBY and JACOB GERSHON-COHEN, Albert Einstein Medical Center, Philadelphia.

The exhibit illustrates cases in which the x-ray film has proved a valuable aid to diagnosis. The signs on the film are verified in each case by comparison with large anatomic sections of the operation specimen. The exhibit is arranged as follows: 1. Carcinoma: (*a*) typical cases to emphasize the criteria to be looked for on the film; (*b*) cases doubtful clinically, suspicion of malignancy confirmed by x-ray; (*c*) cases clinically benign, carcinoma diagnosed on the x-ray film; (*d*) cases believed to be benign but the x-ray showed an area in which biopsy was advised; (*e*) occult tumors diagnosed and localized by x-ray. 2. Benign Lesions: clinical diagnosis carcinoma, x-ray showed adenosis, abscess, plasma cell mastitis, or fat necrosis.

A Topographic Approach to the Roentgenologic and Pathological Examination of Laryngopharyngeal Tumors

GILBERT H. FLETCHER, JACOB W. OLD, and GEORGE S. LOQUVAM, University of Texas, M.D. Anderson Hospital for Cancer Research, Houston, Texas.

Several cases illustrating the anatomic classification of laryngopharyngeal tumors are shown. The diagnosis of site of origin and extension of the disease is made on the basis of films and large sections of the operative specimen.

Chest X-Rays

CHARLES S. CAMERON and BREWSTER S. MILLER, American Cancer Society, New York.

Chest pictures on 14" × 17" x-ray films will be taken of physicians and their guests attending the Miami meeting. The work will be done by the American Cancer Society with the cooperation of the Picker X-Ray Corporation.

HEALTH FAIR

MUNICIPAL AUDITORIUM, BAY FRONT PARK DECEMBER 2-5, 1954

RICHARD F. STOVER, CHAIRMAN

The Dade County Medical Association, in cooperation with the American Medical Association, will sponsor a Health Fair for four days following the meetings at Dinner Key Auditorium. The Health Fair, which will be held in the Municipal Auditorium in Bay Front Park at Biscayne Boulevard and North East Fifth Street, will be the public's part of the Clinical Meeting. The interest created by an A.M.A. meeting is intense and this method is being used to satisfy, to a partial degree, the demand for health information.

A preview of the Fair will take place at 4:00 p.m., Wednesday, December 1. Special arrangements will be made for schools to visit the Fair beginning Thursday morning, and continuing throughout the week. The grand opening for the public will occur at 1:00 p.m., Thursday, December 2, and the Fair will remain open thereafter until 10:00 p.m. each evening, closing on Sunday evening, December 5.

A large number of exhibits has been arranged on such subjects as heart disease, cancer, tuberculosis, nutrition, general health care and numerous others. Continuous demonstrations will take place, with many visitor-participation devices. Motion pictures will supplement the exhibits with a continuous showing of carefully selected films.

The complete program of the Health Fair will be announced shortly.

Clinical Features and Chemical Morphology of Semen and Some of Its Variations

Heron O. Singher, *Ortho Research Foundation, Raritan, N. J.*, and Edward T. Tyler, *Los Angeles County Harbor General Hospital, Los Angeles.*

The exhibit describes the findings of comprehensive surveys initiated for the purpose of establishing normal values for human semen and providing criteria for evaluating therapeutic measures. The findings presented include the results of studies of about 3,000 semen specimens obtained from both fertile and infertile men. The presentation includes (1) data on the variation in protein composition of seminal plasma as determined electrophoretically; (2) data on amino acid variation in seminal fluids as identified mainly by chromatographic methods; (3) an outline of relationships of the parts of the male generative tract concerned in the formation of certain constituents of the semen; and (4) a summary of the clinical findings obtained. In the course of this study uterine contractants in semen were discovered and are described in the exhibit.

American Association of Blood Banks

Oscar B. Hunter Jr., *Washington, D. C.*

This exhibit is designed to show the doctor, technologist, nurse, and researcher as well as administrative personnel of hospitals and blood banks how a good blood bank can be set up, what it can accomplish, and how the association can be of assistance in the setting up and improvement of the blood bank activities. An outline of a national blood bank clearing house will also be displayed.

The Urinary Albumin Excretion Test in Differentiation of Renal Disorders—The Clinical Significance of Chronic Asymptomatic Albuminuria

S. Edward King, David Baldwin, and Saul B. Gilson, *U. S. Army Hospital, Fort Jay, New York.*

Alterations in albumin (protein) excretion in sequential urinary specimens collected after rest and activity have been applied to the study of a wide variety of renal disorders in about 4,500 ambulatory asymptomatic persons. Standard conditions which included moderate hydropenia were imposed. Cases of albuminuria were classified into constant (continuous) and inconstant (intermittent and orthostatic). Albuminuria in all specimens at rest and activity (constant) represents significant, usually chronic, renal disease. In over 90% of cases this pattern was reduplicated on reexamination, in some instances after three years. Most of these cases (about 500) were chronic glomerulonephritis. Previous history or evidence of renal disease was unusual. Too little is known concerning the evolution of most cases of chronic intermittent and orthostatic proteinuria to justify definite conclusions. Evidence is submitted casting doubt on the assumption that these cases are usually benign.

Histology and Mechanics of the Scalp

Hans Elias and Adolph M. Brown, *Chicago Medical School, Chicago.*

Thickness of scalp is closely related to hair growth. Five regions of each of 30 scalps, normal and showing various degrees of patterned baldness, are correlated and analyzed. Mechanical stress of the galea and its influence on baldness are studied. The mechanical properties of the scalp are correlated with the arrangement of the connective tissue fibers in three layers of the scalp.

Hydrocortisone Topical Ointment in Dermatology

James Q. Gant Jr., *Washington, D. C.*

The exhibit presents Kodachrome transparencies of skin disease treated with hydrocortisone ointment with before and after pictures.

Medical Education

Edward L. Turner, E. H. Leveroos, and Carl T. Heinze, *Council on Medical Education and Hospitals, American Medical Association, Chicago.*

The exhibit of the Council on Medical Education and Hospitals displays data on medical education, registration and approval of hospitals, training of interns and resident physicians, technical hospital personnel, and medical licensure. Data are included pertaining to lists of approved medical schools, hospitals approved for internships and residencies, and approved technical schools.

Health Hazards of Solvents Frequently Encountered in Industry and in the Home

Clark D. Bridges and Carl M. Peterson, *Council on Industrial Health, American Medical Association, Chicago.*

The exhibit shows that some disabilities have their origins in unsuspected solvents. Various solvents are discussed, with emphasis on the maximum allowable concentrations for continuous and repeated exposure, together with clinical symptoms, treatment, and prevention. Carbon tetrachloride, often considered safe, is given special attention.

Ascerola (Puerto Rican Cherry)—A Rich Natural Source of Vitamin C for Infant Feeding

Conrado F. Asenjo, *University of Puerto Rico School of Medicine and Agricultural Experiment Station, San Juan, P. R.*

The exhibit shows a tree of the Puerto Rican cherry. Charts on current work and reprints of the published papers on the subject are included. The fresh fruit, jams, jelly, and juice in addition to other items will be displayed. This is a cooperative project.

Audiology and Speech Correction Center

James P. Albrite, *Walter Reed Army Hospital, Washington, D. C.*

The functions of the Audiology and Speech Correction Center are shown pictorially: (1) speech pathology, therapy is provided for many types of speech problems; (2) aural rehabilitation, techniques of evaluating hearing loss, the fitting of hearing aids, and auditory rehabilitation are pictured, and (3) special testing techniques and research, some of the research projects and testing methods using specialized equipment are shown.

Rehabilitation for Independence

Lawrence J. Linck and Jayne Shover, *National Society for Crippled Children and Adults, Inc., Chicago*, and Ezelle Kerrigan, *Crippled Children's Society, Miami, Fla.*

Men, women, and children representing a variety of disabilities will show how adaptations in the home and modifications on the job help them to achieve independence in activities of daily living. Some of these modifications are built into the exhibit background, and special equipment and aids will be featured.

Malingering and Rehabilitation

Harold Lefkoe and Albert A. Martucci, *Einstein Medical Center and Philadelphia General Hospital, Philadelphia.*

Illustrations show how the malingerer can be weeded out from the patient with true basis for complaints. The exhibit includes shoulder, back, and hand problems.

Do You Prescribe Therapeutic Diets for Patients with Gastrointestinal Diseases?

Ruth M. Yakel, *American Dietetic Association, Chicago.*

Food models illustrate three palatable, simple, and economical meals which provide a high protein intake, recommended diet therapy for gastrointestinal diseases. The total protein value of the three meals shown, breakfast, lunch, and dinner, is approximately 151 gm. The leaflet which accompanies the exhibit presents a basic meal pattern which can be adapted to provide from 100 to 150 gm. of protein daily.

Grune & Stratton, Inc.
Booth B-11

Recent books of clinical importance will highlight the Grune & Stratton display *Myocardial Infarction* by Wright et al , *Surgical Treatment of Cancer of the Cervix*, edited by Joe V. Meigs, Cartwright's *Diagnostic Laboratory Hematology*, *Management of Mental Deficiency in Children* by Kugelmass, Bendick's *Diagnostic Advances in Gastro ntestinal Roentgenology*, advance proofs of *The Hemorrhagic Disorders* by Stefanini and Dameshek, *The Coagulation of Blood* edited by Tocantins, and Bauer's revised *Differential Diagnosis*

Lea & Febiger
Booth I-11

Among the many new books and new editions to be featured by Lea & Febiger are Twiss and Oppenheim, *Practical Management of Disorders of the Liver, Pancreas and Biliary Tract*, Jonas, *Babcock s Principles and Practice of Surgery*, Ziskind *Psychophysiologic Medicine*, Fleming, D Alonzo and Zapp, *Occupational Medicine*, Fishberg *Hypertension and Nephritis*, Ormsby and Montgomery, *Diseases of the Skin*, *Gray's Anatomy* Moritz, *The Pathology of Trauma*, and Bonica *The Management of Pain*

J. B. Lippincott Company
Booth C-11

For your approval, J B Lippincott Company will present a display of professional books and journals geared to the latest and most important trends in current medicine and surgery These publications written and edited by men active in clinical fields and teaching are a continuation of more than 100 years of traditionally significant publishing

The Macmillan Company
Booth E-9

The Macmillan Company exhibit will consist of a representative selection from its extensive list of professional as well as general publications Among the new titles to be shown are Hussar-Holley s *Antibiotics and Antibiotic Therapy*, A Clinical Manual, Altschul's *Endothelium*, and Yost s *The Bane of Drug Addiction*

The C. V. Mosby Company
Booth G-4

A wealth of new medical literature will be available for leisurely examination in booth G-4 where Mosby publications will be on display Included will be the following titles, all published in 1954 Ackerman Regato's *Cancer*, Thewlis' *Care of The Aged* Bacon Ross' *Atlas of Operative Technic—Anus Rectum, Colon* Gradwohl's *Legal Medicine* Dimond's *Electrocardiography*, Allen s *The Skin* Scuderi's *Atlas of Orthopedic Traction Procedures* Ryan's *Headache*, Bateman s *The Shoulder* and Vaughan Black's *Practice of Allergy* and *Primer of Allergy*

W. F. Prior Company, Inc.
Booth D-5

The physician whose reading hours are limited may find it advantageous to visit the W F Prior booth The fact that Tice Sloan's *Practice of Medicine* is the most used—but least read—of all their books will provide the basis for an interesting demonstration *Practice of Pediatrics* by Brennemann McQuarrie, Lewis Walters' *Practice of Surgery*, and Davis Carter's *Gynecology and Obstetrics* will be included in the display

W. B. Saunders Company
Booth A-5

The world s definitive reference source on urology will be ready just in time for this meeting It's the new three volume work edited by Dr Meredith Campbell, with contributions by fifty one internationally known authorities Saunders is proud to publish it, proud too of the Saunders record of having participated in every Technical Exposition ever sponsored by the American Medical Association

State Journal Advertising Bureau
Booth D-13

Of special interest here will be the State Journal Group, comprised of 33 state medical journals—official publications of 37 state medical associations—which follow A M A advertising standards Copies of the informative brochure, *New Advertising Data*, will be available at the Bureau booth Prospective advertisers are invited to stop by to become better acquainted with the Bureau's many services and to secure sample journals with the 1955 rate schedule

Today's Health Magazine
Booth K-5

Here is your chance to secure a free copy of AMA's popular health magazine—*TODAY'S HEALTH*—and to order your new or renewal subscription at a special convention discount. Added features of the exhibit include many reprints of articles from *TODAY'S HEALTH* and a large display of health education material, available through the Bureau of Health Education of the A M A

The Year Book Publishers, Inc.
Booth D-9

Headliner of the Year Book Publishers exhibit will be their unique monthly monographs—*Disease a Month Series* (*DM* for short) Early issues of these new publications can be inspected at the booth Additional attractions will include many of the new *Annual Year Books* (1954 55 Series) and an important group of manuals and monographs especially useful in general practice A few minutes at the Year Book booth should be well spent

DIAGNOSTIC DEVICES

Ames Company, Inc.
Booth D-2

Did you know that Clinitest, for urine sugar analysis, is standardized? Ames representatives will tell you that this assures uniformly reliable results wherever a test is performed—in office ward, clinic, or patient's home Standardization not only curtails error, but saves personnel time It eliminates need for preparing and mixing reagents Also on exhibit are Acetest, for acetonuria, Bumintest, for albuminuria, Hematest, for occult blood, and Ictotest, for bilirubinuria

Beck-Lee Corporation
Booth F-3

For your convenience, Beck-Lee's own engineers will be in attendance at booth F-3 to demonstrate their latest electrocardiographs including the Cardi All, light weight direct writer They will demonstrate its convenience and dependability and discuss the many unusual features which make the Cardi All so popular automatically controlled electronic circuits, simplicity of operation, portability, and others The exhibit will also feature the Beck Lee Model E quartz string galvanometer type electrocardiograph and Model ERA, with the Record Automatic Camera

Cambridge Instrument Company, Inc.
Booth J-3

Cambridge engineers in J-3 will be happy to discuss many items of their manufacture a new Audio-Visual Heart Sound Recorder, the well-known Cambridge Simpli-Scribe direct writing portable electrocardiograph, the Simpli Trol standard string galvanometer electrocardiograph, both in portable and mobile models, Electrocardiograph Stethograph with Pulse Recorders, Operating Room Cardioscope, Educational Cardioscope, Multi Channel Direct Writing Recorder, Electrokymograph, Plethysmograph, and pH Meter

Edin Company, Inc.
Booth J-14

Edin's new Model 250 heated stylus direct writing electrocardiograph will attract your attention in J 14 This equipment has been designed to provide a 'cardiograph of high accuracy for both he general practitioner and the cardiologist New features include push button lead selection, modern streamlined appearance, and freedom from interference

The Graf-Apsco Company
Booth K-3

An answer to your microscope repair problems may be found at booth K-3 of the Graf-Apsco Company, one of America's leading microscope repair houses Rebuilt microscopes of various brands will be displayed as well as many hard to-get discontinued "optics" The new Graf Apsco microscopes with built in safety features and the latest Zeiss instruments will also be demonstrated

Hathaway Instrument Company
Booth J-1

The Hathaway Instrument Company, exhibiting for the first time at an AMA Clinical Meeting, will demonstrate the type SYBP 2 Physiological Recording System This system has been specifically designed for recording dynamic blood pressure, electrocardiograms, respiration and blood flow

Kopp Scientific Inc.
Booth H-18

Kopp Scientific Inc will present an advance in hemoglobinometry—a low priced meter which can be read in a few seconds without drawing blood They will also display their Microgasometer, which permits rapid determination of CO , O , N, CO from ultra micro volumes of blood plasma or serum and special pipettes for biochemical, ultra micro analysis

Sanborn Company
Booth H-4

The Sanborn exhibit will present a continuous demonstration of their new Viso-Scope a 5 inch cathode ray oscilloscope, specially designed for monitoring or visualizing ECG's and other bio physical phenomena which may be recorded via Sanborn recording systems Also on display will be the Viso-Cardiette and Metabulator, together with full data on Sanborn's 1 , 2 and 4-channel direct writing recording systems the Twin Beam photographic recorder for simultaneous phonocardiography, the Electromanometer, for physiologic pressure measurements and other Sanborn equipment for diagnosis and research

DIETETIC PRODUCTS

Adolph's, Ltd.
Booth F-4

Adolph's representatives will remind you to keep your low sodium dieters from cheating with one of the best tasting salt substitutes ever made Adolph's Salt Substitute retains salt flavor in cooking, baking and canning and actually enhances natural food flavor because it contains mono-potassium glutamate You may register for your supply of patient samples at booth F-4

Beech-Nut Packing Company
Booth I-13

The use of Beech-Nut *Strained and Junior Foods for the geriatric* as well as the pediatric patient will be discussed in booth I-13. Beech-Nut nutritionists will be happy to answer your questions regarding their many products available for special feedings.

The Best Foods, Inc.
Booth H-8

This exhibit will give you an opportunity to become better acquainted with products of The Best Foods, Inc.: Hellmann's and Best Foods Real Mayonnaise; French Dressing; Old Homestead French Dressing; Relish Sandwich Spred; Best Foods Mustard with Horseradish; Fanning's Bread & Butter Pickles; and Nucoa, the first yellow margarine with *food value in every* single ingredient.

The BiB Corporation
Booth F-6

The BiB Corporation will display an exact scale model of their canning plant, containing over 1,000 workable *parts. In connection with* the exhibit, the BiB Corporation will distribute informative literature on BiB Orange, Orange-Apricot and Prune-Orange juices. Doctors and guests will receive ice cold juice of their choice.

Borcherdt Malt Extract Company
Booth H-7

Malt Soup Extract, a gentle laxative modifier of milk to soften hard, dry stools of constipated babies, will be featured in the Borcherdt Booth. Clinical studies also indicate its value as a nutrient malt laxative for thin under-par older patients. To demonstrate its fine flavor, Malt Soup Extract in milk will be served to all visitors.

Carnation Company
Booth D-10

The Carnation Company cordially *invite* you to visit booth D-10 where a series of translites will tell an interesting story of their canning and sterilization process. Medical representatives will explain the Carnation processing method and give you reasons why this outstanding milk deserves consideration as a first choice in infant feeding formulas.

The Coca-Cola Company
Booth F-7

Ice cold *Coca-Cola* will be served at booth F-7 through the courtesy and cooperation of the Coca-Cola Bottling Company of Miami and The Coca-Cola Company.

Florida Citrus Commission
Booth J-12

Hospitality is the tradition of the South—and in Florida it takes the form of orange juice. At booth J-12, the Florida Citrus Commission will keep you supplied with your daily quota. If information is desired regarding citrus or citrus products, your inquiry will be most welcome.

General Foods Corporation
Booths *J-5; K-4; K-6*

[illegible] to visit for your morning [illegible]. Minute Rice and Minute [illegible] processed *without* salt—will be [illegible] booth J-5, visitors will hear [illegible] Coffee Flavor Instant [illegible] *and* enjoy a refresh- [illegible] with Instant Postum. [illegible] unsweetened, fruit-flavored [illegible] other low-calorie diets, [illegible] sure to register at [illegible] *booths for pro-* [illegible] literature and recipes.

Gerber Products Company
Booth G-2

A visit to the Gerber booth will be a quick *review in "what's new in baby foods."* There, *you will see Gerber's* complete variety of first-*year supplementary* foods. Newer items will *include Strained* Orange Juice—of high vitamin *C, low peel oil content—and* sterile custard-smooth *Strained Egg Yolks.*

Loma Linda Food Company
Booth I-19

As an aid in solving many feeding *problems, especially those related to allergy, the new* Soyalac Infant Food will be *of particular interest. Attendants at the booth will be happy to discuss* the use of this hypoallergenic food in infant, child and adult special diets. Samples of flavorful Soyalac will be served.

M & R Laboratories
Booth B-4

Your Similac representatives are *happy* to take part in this meeting and to discuss with you the role of Similac in infant feeding. Their latest Pediatric Research Conference Reports and current reprints of nutritional interest will be offered at the exhibit.

Mead Johnson & Company
Booth C-7

Mead Johnson & Company will feature Liquid Lactum and Powdered Lactum, *infant formula* products with balanced "caloric distribution." Liquid Sobee, Mead's hypoallergenic formula with taste appeal, and Lytren, the first oral electrolyte product, will also be shown. Representatives trained in parenteral product administration will be on hand *to discuss* Amigen, Levugen, and related parenteral products.

Newcombe Mead Company, Inc.
Booth H-16

Trophies won by the herds which give Capri Evaporated Goat Milk will make an attractive display at the *Newcombe Mead booth, H-16.* Of interest too will be cut-away cans showing their new lacquered interior finish which protects the milk from contact with metal. Recent literature on the many uses of goat milk may be had at the exhibit.

Pepsi-Cola Company
Booths I-4; I-6

The producers of Pepsi-Cola will have a refreshing drink for you in booths I-4 and I-6. Today's Pepsi, made to suit the *modern* trend, is reduced in calories.

Pet Milk Company
Booth E-4

The Pet Milk Company invite you to stop at booth E-4 and taste their newest product, Instant Pet Nonfat Dry Milk. This completely *new form* of nonfat dry milk dissolves instantly by *simply* stirring with a spoon. Tasty, economical and *convenient,* it may be used wherever restricted fat and caloric intake is indicated, as well as in high protein diets.

Ralston Purina Company
Booth H-11

The Medical Services Kit, to be offered by Ralston Purina Company in booth H-11, will contain recently revised dietary *material* for your inspection. This includes low calorie *diets* for *adults* and teen-age girls, infant feeding directions *forms, normal* and gaining diets, and five *different allergy diets.* These dietary services may be ordered free of charge in any quantities needed for your practice.

The Seven-Up Company
Booths I-17; J-16

"Fresh Up with 7-Up" is *your* invitation to visit booths I-17 and J-16 for a chilled bottle of crystal clear 7-Up. Representatives at the exhibit will be happy to *serve* you.

Swift & Company
Booth H-5

The original all-meat baby foods, Swift's Meats for Babies and Juniors, will be featured at booth H-5. New Swift's Egg Yolks for Babies —offering a convenient and economical way to give babies the nutrients supplied by egg yolks —will also be displayed. You are cordially invited to discuss the use of these body-building foods with the Swift representatives. Literature and information on clinical research will be offered at the booth.

U. S. Vitamin Corporation
Booth F-9

Here you can see and taste for *yourself a new* and different sodium-free salt *substitute,* Co-Salt. A boon *to your patients on restricted sodium intake,* Co-Salt actually tastes like salt, looks like salt and sprinkles like salt.

HEARING AIDS

Zenith Radio Corporation
Booth G-8

In booth G-8 Zenith will exhibit *its* complete line of high quality, low cost hearing aids. Of special interest this year will be the tiny new Zenith Royal M—the smallest, lightest hearing aid *in Zenith's history.*

OFFICE EQUIPMENT

Burton Manufacturing Company
Booth H-6

Many new *and interesting items may be seen in the Burton exhibit. Their well-known line of physicians' examining and surgical lights* will be shown in the new decor colors to match your furniture. In addition, Burton will introduce the Manotest, *a new 300 millimeter mercurial blood pressure indicator* in pocket size.

Gray Manufacturing Co.
Booth G-3

Dictation by telephone sums up the theme of this exhibit, featuring the Gray PhonAudograph—*a* telephone dictation system that is truly a combination unit. When not operated as a recording unit, your secretary may use the same *equipment* to transcribe your dictation. Added features include complete control by clearly marked buttons and inter-communication between dictator and transcriber.

International Business Machines Corp.
Booth K-10

The new IBM Electric *Executive Typewriter* offers the ultimate in distinctive-looking correspondence. Its exclusive proportional spacing principle, combined with any of the 13 special type styles, brings a new *beauty* and readability to letters, case histories and reports. Paced—and spaced—to the *modern tempo,* it performs today's typing *efficiently* and *easily.*

Miles Reproducer Company, Inc.
Booth J-7

Case histories, lectures and dictation may *be recorded* at a 60-foot radius with Walkie-Recordall, an eight pound self-powered recorder-transcriber. Operating in or out of the closed briefcase, indoors or outdoors, its *Voice-Activated* Self-Start-Stop feature automatically *starts and* stops the recording from microphone or telephone. While facilities for transcribing are available, *transcription* may be *eliminated* due to ease of handling the indexed recordings.

York Corporation
Booth K-2

The new, low-cost year round residential air conditioning unit for homes and the reverse-cycle room air conditioner that heats as well as cools will be presented at booth K-2 York Corporation was the first to market the reverse-cycle heating feature in room air conditioners A 'miracle valve" automatically reverses the refrigeration cycle to produce heat by a simple turn of the dial

PERSONNEL BUREAUS

Continental Medical Bureau
Booth I-3

Up-to-date information on openings and locations in the Rocky Mountain area the Pacific Northwest and on the West Coast will be available in Booth I-3 of the Continental Medical Bureau The exhibit will also contain a list of appointments in the Southwest Midwest and a few on the East Coast Helen Buchan Director, and other qualified personnel will be on hand to arrange interviews and to provide detailed information on the many services offered by the Bureau

Woodward Medical Personnel Bureau
Booth I-16

For professional personnel "professionally selected" visit booth I-16 There, Ann Woodward will offer the facilities of the Woodward Medical Personnel Bureau, an organization of international scope, now in its 58th year as counselors in problems of medical and hospital personnel Recommendations can be made of Diplomates of the American Boards, physicians trained in the specialties, Public Health specialists and other professional and auxilliary personnel

PHARMACEUTICALS

Abbott Laboratories
Booths F-1; G-1

At the Abbott booth you'll see the new Filmtab Erythrocin start to dissolve almost as soon as it's swallowed Then you'll see how the Filmtab coating speeds up the absorption of Erythrocin in the blood stream While you're watching, you can stop for coffee or lemonade and low-calorie cookies sweetened with Sucaryl, Abbott's non fattening sweetener Other parts of this interesting exhibit will feature Blutene, the new oral antimenorrhagic, and a graphic demonstration of how Selsun makes giant size chunks of dandruff disappear

American Cyanamid Company
Fine Chemicals Division
Booth A-11

On behalf of leading pharmaceutical manufacturers the American Cyanamid exhibit will present the latest facts about sulfa drugs The exhibit will include a quiz helpful in the selection of a sulfonamide Featured will be the triple sulfas (sulfadiazine, sulfamerazine, sulfamethazine) which have long earned an established place in the physician's armamentarium by virtue of high effectiveness and relative safety

American Hospital Supply Corporation
Booth C-8

The American Hospital Supply Corporation will introduce new Baxter Travert solutions Baxter Plexitron sets for parenteral therapy, and Baxter blood pump for rapid blood transfusion Included in the display will be Dade human blood serums in the exclusive Serum Saver Vials, the Hemolet disposable blood lancet, Lab-Trol, a low cost synthetic control serum Spinco electrophoresis apparatus a complete system for rapid reproducible results, and other new specialties

The Armour Laboratories
Booth B-2

Council accepted indications for Acthar, Armour Laboratories Brand of Adrenocorticotropic Hormone (Corticotropin—ACTH), will be emphasized in booth B 2 An important part of the display will be Armour's Adrenal Cortex Extract, Liver Extract, Liver Injection, Posterior Pituitary Liquid, and Thyroid Representatives will be glad to discuss current aspects of Acthar and other Armour products with you

Ayerst Laboratories
Booth E-5

Ayerst Laboratories cordially invite you to visit booth E 5, featuring Premarin, Antabuse and Trilene Representatives will welcome your inquiries and be glad to provide descriptive literature and reprints

Burroughs Wellcome & Co. (U.S.A.) Inc.
Booth F-10

Burroughs Wellcome will exhibit Aerosporin Sulfate Polymyxin B Sulfate, an antibiotic bactericidal to most gram negative bacilli, including Pseudomonas aeruginosa (B pyocyaneus), Hexameton Chloride, an autonomic ganglion blocking agent for treatment of hypertension, Digoxin, a pure, rapidly eliminated, crystalline glycoside, Globin Insulin, an intermediate acting clear solution requiring no shaking, Anectine Chloride, a short acting skeletal muscle relaxant, and Syrup of Antepar Citrate, to eradicate pinworms and roundworms

Chilean Iodine Educational Bureau, Inc.
Booth H-13

Chilean Iodine Educational Bureau will emphasize the values of iodine and its compounds and preparations in numerous applications, including medicine, surgery, nutrition and sanitation Many new and old uses of iodine are described in reprints of papers which will be available for distribution.

Church & Dwight Co., Inc.
Booth I-12

In booth I-12 Church & Dwight Co, Inc will call attention to its famous Bicarbonate of Soda —Arm & Hammer and Cow Brand Both brands are U S P quality and used extensively in medical practice Both are rated as acceptable dentifrices by the American Dental Association Colorful little booklets and handy pocket sized samples may be had at the booth

Ciba Pharmaceutical Products, Inc.
Booths H-1; H-2

Apresoline, a phthalazine derivative which is orally effective and relatively safe in hypertension of diverse etiology, distinguishes the Ciba exhibit Representatives in attendance will be glad to discuss this important product and to provide up-to-date literature on other Ciba products as well

Eaton Laboratories
Booth C-2

Eaton Laboratories will present Furadantin (brand of nitrofurantoin N N R)—now available in a palatable, liquid suspension form for use in urinary tract infections Designed primarily for pediatric use, it is proving popular in the geriatric field as well As with Furadantin Tablets the Oral Suspension produces strongly antibacterial concentration in the urine within 30 minutes after ingestion

Fellows Medical Mfg. Co., Inc.
Booth G-11

Rectules Chloral Hydrate, Fellows suppositories of chloral hydrate in a specially formulated non-irritating base, will be featured in booth G 11. Now available in 10- and 20-grain strengths, Rectules are particularly valuable in treating elderly patients, those with gastro intestinal disturbances or other cases where oral medication is not possible Originators of chloral hydrate in soft gelatin capsule form, Fellows will also exhibit their Felsules Chloral Hydrate

Geigy Pharmaceuticals
Booth I-10

The Geigy exhibit will feature Butazolidin non-hormonal anti arthritic, useful in the relief of pain, improvement of function and resolution of inflammation in the more serious forms of arthritic disorders On display also will be Tromexan, an oral anticoagulant embodying the advantages of rapid action, little cumulation and diminished risk of sustained or severe hemorrhage

The Harrower Laboratory, Inc.
Booth I-15

Mucotin, indicated in peptic ulcer and gastric hyperacidity, will be shown at the Harrower Laboratory exhibit The product combines two antacids, magnesium trisilicate and aluminum hydroxide gel, with gastric mucin A recent development in the processing of Mucotin tablets now provides a tablet which disintegrates so rapidly that chewing is not required Physicians have found that patients welcome this added convenience

Holland-Rantos Company, Inc.
Booth H-12

Physicians interested in medical contraception are invited to discuss with H-R convention representatives the latest information on laboratory and clinical data concerning the efficacy of Koromex products

Homemakers' Products Corporation
Booth C-12

An exhibit of the latest technical information on the use of antiseptic diaper rinsing in the treatment and prevention of ammonia dermatitis in the infant and adult incontinent will be presented in booth C 12 Diaparene Chloride is a non-volatile, relatively non toxic antiseptic to inhibit bacterial formation of ammonia and eliminate the cause of diaper rash

Lederle Laboratories Division
Booths A-1; B-1

You are cordially invited to visit booths A-1 and B 1 where you will find representatives prepared to give you the latest information on Lederle products

Eli Lilly and Company
Booths B-7; B-9

The Lilly folks, in attendance at this Clinical Meeting, wish to make your visit instructive and interesting Their display will contain information on recent therapeutic developments and will feature the story of the Lilly Junior Taste Panel Those in attendance will welcome your questions about Ilotycin (Erythromycin, Lilly) and other Lilly products

McNeil Laboratories, Inc.
Booth C-1

Butisol Sodium, Syndrox Hydrochloride and Clistin Maleate are among the Council accepted pharmaceutical preparations to be exhibited by McNeil Laboratories Representatives attending McNeil's exhibit extend a warm welcome to their many professional friends

Merck & Co., Inc.

Booth F-5

Therapeutic uses for vitamin B_6 and vitamin B_{12} are to be featured in this year's Merck exhibit. Clinical investigations pointing to these uses are described. A display of the effects of a B_6 deficient diet in monkeys will present additional evidence of the nutritional significance of Pyridoxine.

Nepera Chemical Co., Inc.

Booth H-10

The dependable, urinary antiseptic—Mandelamine in .25 Gm. tablets and also in Hafgrams—will highlight Nepera's exhibit in booth H-10. The new Hafgram Mandelamine provides continued therapeutic drug levels with fewer tablets, resulting in greater convenience and better patient cooperation. Sharing the spotlight will be Neohetramine, an antihistamine effective in hay fever, allergic rhinitis and other allergic conditions.

Ortho Pharmaceutical Corporation

Booths C-6; J-10

The physician's responsibility in marriage counseling is the theme of Ortho's exhibit at booth C-6. This dramatic and provocative subject should be of interest to physicians. At Ortho's second booth, J-10, you will see their diagnostic specialties—featuring fibrindex thrombin, a new product for 60-second determination of the critical fibrinogen index. Representatives look forward to answering your questions on Ortho preparations.

Parke, Davis & Company

Booth E-8

Medical service members of their staff will be in attendance at the Parke, Davis & Company exhibit for consultation and discussion of various products. Important specialties, such as Benadryl, Dilantin, Oxycel, Thrombin Topical, Surital, Chloromycetin and vitamins will be featured. You are cordially invited to visit the P-D booth.

Pfizer Laboratories

Booths B-3; B-5

Terramycin Intramuscular will hold the spotlight this year with a star-studded cast which includes Cortril (brand of hydrocortisone) in several convenient dosage forms and a number of Pfizer steroid hormones. Another newcomer to the Pfizer display will be Bonamine, the first compound against motion sickness to offer 24 hour effectiveness in a single daily dose.

Pharmacia Laboratories, Inc.

Booth D-12

Pharmacia Laboratories will exhibit their Council-accepted product Azulfidine, a new sulfa compound indicated in the treatment of ulcerative colitis. Literature and reprints of papers on this azo compound of salicylic acid and sulfapyridine will be available at the booth.

A. H. Robins Company, Inc.

Booth H-3

A. H. Robins Company will feature Robalate, N.N.R., antacid-demulcent indicated in peptic ulcer therapy and hyperacidity. The pharmaceutically elegant tablets, each containing 0.5 Gm. dihydroxy aluminum aminoacetate, are notable for exceptional palatability.

J. B. Roerig and Company

Booth E-2

Tetracyn, the newest of the broad spectrum antibiotics, will highlight the J. B. Roerig and Company exhibit in booth E-2. Many dosage forms of Tetracyn—Council-accepted for a variety of indications—are now available. On request, trained professional representatives will be glad to furnish visiting physicians with clinical data on Tetracyn and material for clinical use.

Sandoz Pharmaceuticals

Booth F-8

Sandoz is pleased to present its Council-accepted products: Cafergot for effective control of head pain in migraine and other vascular headaches, and Methergine, an effective oxytocic, usually unaccompanied by toxic side effects or undesirable side reactions.

Schering Corporation

Booth C-5

Members of the A.M.A. and their guests are cordially invited to visit the Schering exhibit, featuring the Repetab principle. Repetabs assure immediately available medication and prolonged relief with single-dose convenience. Of interest too will be Chlor-Trimeton, Prantal, Sodium Sulamyd and other Council-accepted products which Schering representatives will be pleased to discuss with you.

Julius Schmid, Inc.

Booth A-9

Julius Schmid will present an interesting and informative exhibit on Ramses Flexible Cushioned Diaphragm and Ramses Jelly. The control of re-infection in Trichomonas vaginalis by the use of XXXX Fourex Skins will also be discussed.

G. D. Searle & Co.

Booth E-3

Members of Searle's medical and medical service staff will be on hand to answer any questions pertaining to Searle Products of Research. Featured will be the newer dosage forms of Banthine, a standard in anticholinergic therapy; Dramamine, for the control of nausea; Alidase, for improved absorption of fluids; Metamucil, for the physiologic correction of constipation or other gastrointestinal dysfunctions; and such time-proven products as Aminophyllin, Gold Sodium Thiosulfate, Iodochlorol, and Sylnasol.

Sharp & Dohme

Booth A-7

A new anesthetic agent, Cyclaine Hydrochloride, suitable for infiltration, nerve block, spinal, caudal and topical anesthesia, will highlight the Sharp & Dohme display. Nalline, for narcotic induced respiratory depression, and Mephyton, for prevention and treatment of hypoprothrombinemia, will also be of interest. Expertly trained personnel will welcome the opportunity to discuss these products with you.

Smith, Kline & French Laboratories

Booth D-1

The S. K. F. booth will feature Spansule Sustained Release Capsules—a new oral dosage form. Just one Spansule capsule, taken on arising, provides uniform therapeutic effect throughout the day. Thus, Spansule capsules offer you three advantages: smooth, uniform action; prolonged therapeutic effect; and convenient once-a-day dosage. If you have not yet tried these capsules in your practice, Dexedrine and Benzedrine Spansules will be available at the booth.

E. R. Squibb & Sons

Booths D-4; D-6

Squibb, manufacturing chemists to the medical profession since 1858, welcomes this opportunity to greet its many friends. Each year Squibb looks forward to these meetings where physicians and manufacturers share in the advances of medical research. It values this personal contact and cordially invites all members to visit its exhibit.

Travenol Laboratories, Inc

Booth J-17

The active principle of the thyroid gland now comes in a pure, crystalline synthetic preparation—Synthroid Sodium. Available in 0.05 mg., 0.1 mg. and 0.2 mg. scored tablets, this uniform, tasteless and odorless product for thyroid deficiencies will be introduced in the Travenol Laboratories exhibit, J-17.

Varick Pharmacal Company, Inc.

Booth E-7

E. Fougera and Company, Inc. and its division, Varick Pharmacal Company, Inc., invite physicians to discuss with professional service representatives new preparations of importance to everyday practice. The exhibit will feature their new "patient-prepared" polysulfide lotion, Pronac, a dependable therapy for acne. Descriptive literature and samples of all products will be available.

Walgreen Drug Stores

Booth D-7

The rising number of blood pressure problems will focus special attention on the Walgreen exhibit, booth D-7. In keeping with its policy of rendering helpful service, this pioneer prescription department will present a timely, informative display, stressing particularly the products used in hypertension. When Charles R. Walgreen, progressive young pharmacist, opened his first drug store in 1901, the horse and buggy still held sway over the new fangled auto—and high blood pressure was not a clinical problem.

Warner-Chilcott Laboratories

Booth C-9

Two important cardiovascular agents will be featured at the Warner-Chilcott booth: Methium, to lower blood pressure and relieve hypertensive symptoms; and Peritrate, to prevent attacks in angina pectoris. Representatives and research personnel will welcome an opportunity to discuss these drugs with you.

White Laboratories, Inc.

Booth C-10

White's Phonoscope, in booth C-10, will enable you to hear some of the heart sounds commonly encountered in clinical medicine and to see graphically displayed the associated electrocardiograms, carotid artery pulsations and apical stethograms. Gitaligin (amorphous gitalin), described as a ". . . digitalis preparation of choice," will be on display.

Winthrop-Stearns Inc.

Booth E-1

Winthrop-Stearns Inc. will feature animated, three-dimensional transparent models, as well as translucent anatomic drawings in full color by Leon Schlossberg, illustrating: The Circulatory System; A Pregnant Woman at Term with Triplets; and The Gastro-Intestinal Tract. The exhibit will focus attention on Levophed in the management of shock; Creamalin, in peptic ulcer; and Demerol, in obstetric analgesia.

Wyeth Laboratories

Booth A-3

Wyeth will exhibit its highly insoluble, long-acting penicillin compound, in various forms: Oral Suspension Bicillin and Tablets Bicillin, resistant to degradation by gastric juice; and Bicillin Injection (several strengths) for the treatment and prophylaxis of infections caused by penicillin-sensitive organisms.

Merck & Co., Inc.
Booth F-5

Therapeutic uses for vitamin B_6 and vitamin B_{12} are to be featured in this year's Merck exhibit. Clinical investigations pointing to these uses are described. A display of the effects of a B_6 deficient diet in monkeys will present additional evidence of the nutritional significance of Pyridoxine.

Nepera Chemical Co., Inc.
Booth H-10

The dependable, urinary antiseptic—Mandelamine in 25 Gm tablets and also in Hafgrams—will highlight Nepera's exhibit in booth H-10. The new Hafgram Mandelamine provides continued therapeutic drug levels with fewer tablets, resulting in greater convenience and better patient cooperation. Sharing the spotlight will be Neohetramine, an antihistamine effective in hay fever, allergic rhinitis and other allergic conditions.

Ortho Pharmaceutical Corporation
Booths C-6; J-10

The physician's responsibility in marriage counseling is the theme of Ortho's exhibit at booth C-6. This dramatic and provocative subject should be of interest to physicians. At Ortho's second booth, J-10, you will see their diagnostic specialties—featuring fibrindex thrombin, a new product for 60-second determination of the critical fibrinogen index. Representatives look forward to answering your questions on Ortho preparations.

Parke, Davis & Company
Booth E-8

Medical service members of their staff will be in attendance at the Parke, Davis & Company exhibit for consultation and discussion of various products Important specialties, such as Benadryl, Dilantin, Oxycel, Thrombin Topical, Surital, Chloromycetin and vitamins will be featured. You are cordially invited to visit the P-D booth.

Pfizer Laboratories
Booths B-3; B-5

Terramycin Intramuscular will hold the spotlight this year with a star-studded cast which includes Cortril (brand of hydrocortisone) in several convenient dosage forms and a number of Pfizer steroid hormones. Another newcomer to the Pfizer display will be Bonamine, the first compound against motion sickness to offer 24 hour effectiveness in a single daily dose.

Pharmacia Laboratories, Inc.
Booth D-12

Pharmacia Laboratories will exhibit their Council-accepted product Azulfidine, a new sulfa compound indicated in the treatment of ulcerative colitis Literature and reprints of papers on this azo compound of salicylic acid and sulfapyridine will be available at the booth.

A. H. Robins Company, Inc.
Booth H-3

A. H. Robins Company will feature Robalate, N.N.R., antacid-demulcent indicated in peptic ulcer therapy and hyperacidity. The pharmaceutically elegant tablets, each containing 0 5 Gm. dihydroxy aluminum aminoacetate, are notable for exceptional palatability.

J. B. Roerig and Company
Booth E-2

Tetracyn, the newest of the broad spectrum antibiotics, will highlight the J B Roerig and Company exhibit in booth E-2. Many dosage forms of Tetracyn—Council-accepted for a variety of indications—are now available. On request, trained professional representatives will be glad to furnish visiting physicians with clinical data on Tetracyn and material for clinical use.

Sandoz Pharmaceuticals
Booth F-8

Sandoz is pleased to present its Council-accepted products: Cafergot for effective control of head pain in migraine and other vascular headaches, and Methergine, an effective oxytocic, usually unaccompanied by toxic side effects or undesirable side reactions.

Schering Corporation
Booth C-5

Members of the A.M.A. and their guests are cordially invited to visit the Schering exhibit, featuring the Repetab principle. Repetabs assure immediately available medication and prolonged relief with single dose convenience. Of interest too will be Chlor-Trimeton, Prantal, Sodium Sulamyd and other Council-accepted products which Schering representatives will be pleased to discuss with you.

Julius Schmid, Inc.
Booth A-9

Julius Schmid will present an interesting and informative exhibit on Ramses Flexible Cushioned Diaphragm and Ramses Jelly. The control of re-infection in Trichomonas vaginalis by the use of XXXX Fourex Skins will also be discussed.

G. D. Searle & Co.
Booth E-3

Members of Searle's medical and medical service staff will be on hand to answer any questions pertaining to Searle Products of Research. Featured will be the newer dosage forms of Banthine, a standard in anticholinergic therapy; Dramamine, for the control of nausea; Alidase, for improved absorption of fluids; Metamucil, for the physiologic correction of constipation or other gastrointestinal dysfunctions; *and such time-proven products as Aminophyllin, Gold Sodium Thiosulfate, Iodochlorol, and Sylnasol.*

Sharp & Dohme
Booth A-7

A new anesthetic agent, Cyclaine Hydrochloride, suitable for infiltration, nerve block, spinal, caudal and topical anesthesia, will highlight the Sharp & Dohme display. Nalline, for narcotic induced respiratory depression, and Mephyton, for prevention and treatment of hypoprothrombinemia, will also be of interest. Expertly trained personnel will welcome the opportunity to discuss these products with you

Smith, Kline & French Laboratories
Booth D-1

The S K. F booth will feature Spansule Sustained Release Capsules—a new oral dosage form Just one Spansule capsule, taken on arising, provides uniform therapeutic effect throughout the day. Thus, Spansule capsules offer you three advantages: smooth, uniform action; prolonged therapeutic effect; and convenient once-a-day dosage If you have not yet tried these capsules in your practice, Dexedrine and Benzedrine Spansules will be available at the booth.

E. R. Squibb & Sons
Booths D-4; D-6

Squibb, manufacturing chemists to the medical profession since 1858, welcomes this opportunity to greet its many friends. Each year Squibb looks forward to these meetings where physicians and manufacturers share in the advances of medical research. It values this personal contact and cordially invites all members to visit its exhibit.

Travenol Laboratories, Inc
Booth J-17

The active principle of the thyroid gland now comes in a pure, crystalline synthetic preparation—Synthroid Sodium. Available in 0 05 mg, 0.1 mg and 0 2 mg. scored tablets, this uniform, tasteless and odorless product for thyroid deficiencies will be introduced in the Travenol Laboratories exhibit, J-17.

Varick Pharmacal Company, Inc.
Booth E-7

E. Fougera and Company, Inc. and its division, Varick Pharmacal Company, Inc, invite physicians to discuss with professional service representatives new preparations of importance to everyday practice. The exhibit will feature their *new "patient-prepared"* polysulfide lotion, Pronac, a dependable therapy for acne Descriptive literature and samples of all products will be available.

Walgreen Drug Stores
Booth D-7

The rising number of blood pressure problems will focus special attention on the Walgreen exhibit, booth D-7. In keeping with its policy of rendering helpful service, this pioneer prescription department will present a timely, informative display, stressing particularly the products used in hypertension. When Charles R. Walgreen, progressive young pharmacist, opened his first drug store in 1901, the horse and buggy still held sway over the new fangled auto—and high blood pressure was not a clinical problem.

Warner-Chilcott Laboratories
Booth C-9

Two important cardiovascular agents will be featured at the Warner-Chilcott booth: Methium, to lower blood pressure and relieve hypertensive symptoms, and Peritrate, to prevent attacks in angina pectoris. Representatives and research personnel will welcome an opportunity to discuss these drugs with you.

White Laboratories, Inc.
Booth C-10

White's Phonoscope, in booth C-10, will enable you to hear some of the heart sounds commonly encountered in clinical medicine and to see graphically displayed the associated electrocardiograms, carotid artery pulsations and apical stethograms. Gitaligin (amorphous gitalin), described as a ". . . digitalis preparation of choice," will be on display

Winthrop-Stearns Inc.
Booth E-1

Winthrop-Stearns Inc will feature animated, three-dimensional transparent models, as well as translucent anatomic drawings in full color by Leon Schlossberg, illustrating The Circulatory System, A Pregnant Woman at Term with Triplets; and The Gastro-Intestinal Tract The exhibit will focus attention on Levophed in the management of shock, Creamalin, in peptic ulcer, and Demerol, in obstetric analgesia.

Wyeth Laboratories
Booth A-3

Wyeth will exhibit its highly insoluble, long-acting penicillin compound, in various forms Oral Suspension Bicillin and Tablets Bicillin, resistant to degradation by gastric juice, and Bicillin Injection (several strengths) for the treatment and prophylaxis of infections caused by penicillin-sensitive organisms.

REPORTS OF OFFICERS

REPORT OF THE SECRETARY

To the Members of the House of Delegates of the American Medical Association:

The following annual report of the Secretary is respectfully submitted:

Membership

The year ending Aug. 31, 1954, again showed gratifying progress in the Membership-Subscription Division of the Department of Records and Circulation. The upward trend in membership income continued through 1953-1954 and resulted in revenue of $3,020,975.50 from paid members for the first eight months of 1954, as against $2,923,625.25 for the first eight months of 1953, and $2,739,520.00 for the first eight months of 1952. The number of paid members increased by 4,001 for the first eight months of this year. The total was 121,064, while in the previous year it was 117,063 for the same period, and 108,998 for 1952. A breakdown of the membership records, as of Aug. 31, 1954, includes the following types and numbers of members:

Active paid members	121,064
Active members—dues unpaid for 1954 (estimate)	4,000
Active members exempted from payment of dues	12,157
Associate members	5,249
Affiliate members	283
Honorary members	100
Service members	8,276
Total	151,129

During 1954, 1,240 payments were received to cover 1953 dues, 113 payments to cover 1952 dues, 44 payments to cover 1951 dues, and 33 payments to cover 1950 dues. These payments of dues, received along with payment of the physician's 1954 dues, have made it possible to restore to good standing a number of physicians who had been considered delinquent in the payment of dues for a previous year.

The following table shows the number of paid members in the states and territories for 1954 and 1953, as of Aug. 31 of the respective years:

	1954 Paid Members	1953 Paid Members
Alabama	1,320	1,201
Arizona	669	626
Arkansas	833	815
California	11,912	11,377
Colorado	1,402	1,331
Connecticut	2,129	1,988
Delaware	267	266
District of Columbia	1,091	1,031
Florida	2,070	1,903
Georgia	1,883	1,746
Idaho	419	432
Illinois	8,253	7,910
Indiana	2,969	2,821
Iowa	1,931	1,918
Kansas	1,227	1,206
Kentucky	1,513	1,447
Louisiana	1,537	1,398
Maine	475	492
Maryland	1,606	1,505
Massachusetts	4,236	4,099
Michigan	4,779	4,679
Minnesota	2,593	2,550
Mississippi	1,026	975
Missouri	2,671	2,505
Montana	430	407
Nebraska	1,098	1,095
Nevada	151	138
New Hampshire	419	393
New Jersey	4,736	4,478
New Mexico	401	369
New York	14,723	15,207
North Carolina	2,295	2,136
North Dakota	338	312
Ohio	6,526	6,090
Oklahoma	1,307	1,275
Oregon	1,173	1,235
Pennsylvania	9,848	9,718
Rhode Island	601	556
South Carolina	970	807
South Dakota	334	345
Tennessee	1,920	1,795
Texas	5,583	5,324
Utah	626	616
Vermont	356	339
Virginia	1,529	1,502
Washington	2,107	2,025
West Virginia	1,252	1,225
Wisconsin	2,720	2,689
Wyoming	215	205
Canal Zone	6	15
Hawaii	350	339
Puerto Rico	68	53
Alaska	44	55
Total	121,064	117,063

Since July 1, letters have been sent to more than 7,200 members who had not yet paid 1954 membership dues, calling attention to the fact that their names must be taken off the membership roster if payment is not received within a reasonable time. The lists of names have also been checked with the secretaries of constituent associations for possible eligibility to exemption, transfers, or changes in membership classifications. Many physicians who had been notified that payment of their 1954 dues had not been received stated that they had not been billed by their county or state society, that they had overlooked the bill or thought it had been paid at the time other dues were paid, or that they believed they were eligible to exemption. Others who had not paid their county, state, and American Medical Association dues and had moved to a different state found that they had to wait six months or a year to become eligible to membership in the new location.

In 1950, every active member of a constituent association was an active member of the American Medical Association and was required to pay, for the first time, membership dues of $25.00. Those physicians who did not pay 1950 dues were dropped from membership and, if they wished to be reinstated later as members, were required to pay the back dues for 1950 as well as the current year's dues. At the St. Louis Meeting in December, 1953, a resolution was passed which authorized the temporary waiving of 1950 dues for physicians who had been dropped because of nonpayment, provided they paid 1954 dues before July 1, 1954. A number took advantage of the provisions of the resolution and were reinstated as members. Now that the deadline of July 1, 1954, has passed, the waiver of 1950 dues has been withdrawn, and payment of back dues for that year will hereafter be required of physicians who had been dropped because of nonpayment of 1950 dues, unless there are extenuating circumstances.

Another resolution passed at the St. Louis Meeting in December, 1953, recommended that component and constituent associations study the article "Development of Uniformity in Membership Regulations between Constituent Associations and the American Medical Association," which appeared in THE JOURNAL late in 1953. The article pointed out the variety of membership classifications in the constituent associations and the divergent regulations covering transfers of membership, delinquency policies, billing procedures, and privileges of members. Some of the suggestions on uniformity made in the article have been studied by the constituent associations and constitutional changes adopted by their legislative bodies, while other associations have changes under consideration.

REPORTS OF OFFICERS

REPORT OF THE SECRETARY

To the Members of the House of Delegates of the American Medical Association:

The following annual report of the Secretary is respectfully submitted:

Membership

The year ending Aug. 31, 1954, again showed gratifying progress in the Membership-Subscription Division of the Department of Records and Circulation. The upward trend in membership income continued through 1953-1954 and resulted in revenue of $3,020,975.50 from paid members for the first eight months of 1954, as against $2,923,625.25 for the first eight months of 1953, and $2,739,520.00 for the first eight months of 1952. The number of paid members increased by 4,001 for the first eight months of this year. The total was 121,064, while in the previous year it was 117,063 for the same period, and 108,998 for 1952. A breakdown of the membership records, as of Aug. 31, 1954, includes the following types and numbers of members:

Active paid members	121,064
Active members—dues unpaid for 1954 (estimate)	1,000
Active members exempted from payment of dues	12,157
Associate members	5,249
Affiliate members	283
Honorary members	100
Service members	8,276
Total	151,129

During 1954, 1,240 payments were received to cover 1953 dues, 113 payments to cover 1952 dues, 44 payments to cover 1951 dues, and 33 payments to cover 1950 dues. These payments of dues, received along with payment of the physician's 1954 dues, have made it possible to restore to good standing a number of physicians who had been considered delinquent in the payment of dues for a previous year.

The following table shows the number of paid members in the states and territories for 1954 and 1953, as of Aug. 31 of the respective years:

	1954 Paid Members	1953 Paid Members
Alabama	1,320	1,261
Arizona	669	620
Arkansas	888	845
California	11,942	11,377
Colorado	1,402	1,331
Connecticut	2,129	1,988
Delaware	267	266
District of Columbia	1,094	1,031
Florida	2,070	1,903
Georgia	1,853	1,746
Idaho	449	432
Illinois	8,253	7,910
Indiana	2,969	2,824
Iowa	1,934	1,918
Kansas	1,227	1,206
Kentucky	1,513	1,447
Louisiana	1,537	1,398
Maine	475	492
Maryland	1,606	1,505
Massachusetts	4,236	4,099
Michigan	4,779	4,679
Minnesota	2,593	2,550
Mississippi	1,026	975
Missouri	2,671	2,505
Montana	430	407
Nebraska	1,098	1,095
Nevada	151	138
New Hampshire	419	393
New Jersey	4,736	4,478
New Mexico	401	369
New York	14,723	15,207
North Carolina	2,295	2,136
North Dakota	338	312
Ohio	6,526	6,090
Oklahoma	1,307	1,275
Oregon	1,173	1,235
Pennsylvania	9,848	9,718
Rhode Island	601	556
South Carolina	970	807
South Dakota	334	345
Tennessee	1,920	1,795
Texas	5,583	5,324
Utah	626	616
Vermont	356	339
Virginia	1,529	1,502
Washington	2,107	2,025
West Virginia	1,252	1,225
Wisconsin	2,720	2,639
Wyoming	215	205
Canal Zone	6	15
Hawaii	350	339
Puerto Rico	68	53
Alaska	44	55
Total	121,064	117,063

Since July 1, letters have been sent to more than 7,200 members who had not yet paid 1954 membership dues, calling attention to the fact that their names must be taken off the membership roster if payment is not received within a reasonable time. The lists of names have also been checked with the secretaries of constituent associations for possible eligibility to exemption, transfers, or changes in membership classifications. Many physicians who had been notified that payment of their 1954 dues had not been received stated that they had not been billed by their county or state society, that they had overlooked the bill or thought it had been paid at the time other dues were paid, or that they believed they were eligible to exemption. Others who had not paid their county, state, and American Medical Association dues and had moved to a different state found that they had to wait six months or a year to become eligible to membership in the new location.

In 1950, every active member of a constituent association was an active member of the American Medical Association and was required to pay, for the first time, membership dues of $25.00. Those physicians who did not pay 1950 dues were dropped from membership and, if they wished to be reinstated later as members, were required to pay the back dues for 1950 as well as the current year's dues. At the St. Louis Meeting in December, 1953, a resolution was passed which authorized the temporary waiving of 1950 dues for physicians who had been dropped because of nonpayment, provided they paid 1954 dues before July 1, 1954. A number took advantage of the provisions of the resolution and were reinstated as members. Now that the deadline of July 1, 1954, has passed, the waiver of 1950 dues has been withdrawn, and payment of back dues for that year will hereafter be required of physicians who had been dropped because of nonpayment of 1950 dues, unless there are extenuating circumstances.

Another resolution passed at the St. Louis Meeting in December, 1953, recommended that component and constituent associations study the article "Development of Uniformity in Membership Regulations between Constituent Associations and the American Medical Association," which appeared in The Journal late in 1953. The article pointed out the variety of membership classifications in the constituent associations and the divergent regulations covering transfers of membership, delinquency policies, billing procedures, and privileges of members. Some of the suggestions on uniformity made in the article have been studied by the constituent associations and constitutional changes adopted by their legislative bodies, while other associations have changes under consideration.

REPORTS OF OFFICERS

REPORT OF THE SECRETARY

To the Members of the House of Delegates of the American Medical Association:

The following annual report of the Secretary is respectfully submitted:

Membership

The year ending Aug. 31, 1954, again showed gratifying progress in the Membership-Subscription Division of the Department of Records and Circulation. The upward trend in membership income continued through 1953-1954 and resulted in revenue of $3,020,975.50 from paid members for the first eight months of 1954, as against $2,923,625.25 for the first eight months of 1953, and $2,739,520.00 for the first eight months of 1952. The number of paid members increased by 4,001 for the first eight months of this year. The total was 121,064, while in the previous year it was 117,063 for the same period, and 108,998 for 1952. A breakdown of the membership records, as of Aug. 31, 1954, includes the following types and numbers of members:

Active paid members	121,064
Active members—dues unpaid for 1954 (estimate)	4,000
Active members exempted from payment of dues	12,157
Associate members	5,249
Affiliate members	283
Honorary members	100
Service members	8,276
Total	131,129

During 1954, 1,240 payments were received to cover 1953 dues, 113 payments to cover 1952 dues, 44 payments to cover 1951 dues, and 33 payments to cover 1950 dues. These payments of dues, received along with payment of the physician's 1954 dues, have made it possible to restore to good standing a number of physicians who had been considered delinquent in the payment of dues for a previous year.

The following table shows the number of paid members in the states and territories for 1954 and 1953, as of Aug. 31 of the respective years:

	1954 Paid Members	1953 Paid Members
Alabama	1,326	1,261
Arizona	669	626
Arkansas	883	815
California	11,912	11,377
Colorado	1,402	1,331
Connecticut	2,129	1,988
Delaware	267	266
District of Columbia	1,091	1,034
Florida	2,070	1,903
Georgia	1,883	1,716
Idaho	419	432
Illinois	8,253	7,910
Indiana	2,969	2,821
Iowa	1,931	1,918
Kansas	1,227	1,206
Kentucky	1,513	1,447
Louisiana	1,537	1,398
Maine	475	492
Maryland	1,606	1,505
Massachusetts	4,236	4,099
Michigan	4,779	4,679
Minnesota	2,593	2,550
Mississippi	1,026	975
Missouri	2,671	2,505
Montana	430	407
Nebraska	1,098	1,095
Nevada	151	138
New Hampshire	419	393
New Jersey	4,730	4,478
New Mexico	401	369
New York	14,723	15,207
North Carolina	2,295	2,136
North Dakota	338	312
Ohio	6,526	6,090
Oklahoma	1,307	1,275
Oregon	1,173	1,235
Pennsylvania	9,848	9,718
Rhode Island	601	556
South Carolina	970	807
South Dakota	334	345
Tennessee	1,920	1,795
Texas	5,583	5,324
Utah	626	616
Vermont	356	339
Virginia	1,529	1,502
Washington	2,107	2,025
West Virginia	1,252	1,225
Wisconsin	2,720	2,689
Wyoming	215	205
Canal Zone	6	15
Hawaii	350	339
Puerto Rico	68	53
Alaska	44	55
Total	121,064	117,063

Since July 1, letters have been sent to more than 7,200 members who had not yet paid 1954 membership dues, calling attention to the fact that their names must be taken off the membership roster if payment is not received within a reasonable time. The lists of names have also been checked with the secretaries of constituent associations for possible eligibility to exemption, transfers, or changes in membership classifications. Many physicians who had been notified that payment of their 1954 dues had not been received stated that they had not been billed by their county or state society, that they had overlooked the bill or thought it had been paid at the time other dues were paid, or that they believed they were eligible to exemption. Others who had not paid their county, state, and American Medical Association dues and had moved to a different state found that they had to wait six months or a year to become eligible to membership in the new location.

In 1950, every active member of a constituent association was an active member of the American Medical Association and was required to pay, for the first time, membership dues of $25.00. Those physicians who did not pay 1950 dues were dropped from membership and, if they wished to be reinstated later as members, were required to pay the back dues for 1950 as well as the current year's dues. At the St. Louis Meeting in December, 1953, a resolution was passed which authorized the temporary waiving of 1950 dues for physicians who had been dropped because of nonpayment, provided they paid 1954 dues before July 1, 1954. A number took advantage of the provisions of the resolution and were reinstated as members. Now that the deadline of July 1, 1954, has passed, the waiver of 1950 dues has been withdrawn, and payment of back dues for that year will hereafter be required of physicians who had been dropped because of nonpayment of 1950 dues, unless there are extenuating circumstances.

Another resolution passed at the St. Louis Meeting in December, 1953, recommended that component and constituent associations study the article "Development of Uniformity in Membership Regulations between Constituent Associations and the American Medical Association," which appeared in THE JOURNAL late in 1953. The article pointed out the variety of membership classifications in the constituent associations and the divergent regulations covering transfers of membership, delinquency policies, billing procedures, and privileges of members. Some of the suggestions on uniformity made in the article have been studied by the constituent associations and constitutional changes adopted by their legislative bodies, while other associations have changes under consideration.

REPORTS OF OFFICERS

REPORT OF THE SECRETARY

To the Members of the House of Delegates of the American Medical Association:

The following annual report of the Secretary is respectfully submitted:

Membership

The year ending Aug. 31, 1954, again showed gratifying progress in the Membership-Subscription Division of the Department of Records and Circulation. The upward trend in membership income continued through 1953-1954 and resulted in revenue of $3,020,975.50 from paid members for the first eight months of 1954, as against $2,923,625.25 for the first eight months of 1953, and $2,739,520.00 for the first eight months of 1952. The number of paid members increased by 4,001 for the first eight months of this year. The total was 121,064, while in the previous year it was 117,063 for the same period, and 108,998 for 1952. A breakdown of the membership records, as of Aug. 31, 1954, includes the following types and numbers of members:

Active paid members	121,064
Active members—dues unpaid for 1954 (estimate)	4,000
Active members exempted from payment of dues	12,157
Associate members	5,249
Affiliate members	283
Honorary members	100
Service members	8,276
Total	151,129

During 1954, 1,240 payments were received to cover 1953 dues, 113 payments to cover 1952 dues, 44 payments to cover 1951 dues, and 33 payments to cover 1950 dues. These payments of dues, received along with payment of the physician's 1954 dues, have made it possible to restore to good standing a number of physicians who had been considered delinquent in the payment of dues for a previous year.

The following table shows the number of paid members in the states and territories for 1954 and 1953, as of Aug. 31 of the respective years:

	1954 Paid Members	1953 Paid Members
Alabama	1,326	1,264
Arizona	669	626
Arkansas	883	815
California	11,912	11,377
Colorado	1,402	1,331
Connecticut	2,129	1,988
Delaware	267	266
District of Columbia	1,094	1,034
Florida	2,070	1,903
Georgia	1,883	1,716
Idaho	419	432
Illinois	8,253	7,910
Indiana	2,969	2,824
Iowa	1,934	1,918
Kansas	1,227	1,206
Kentucky	1,513	1,417
Louisiana	1,537	1,398
Maine	475	492
Maryland	1,606	1,505
Massachusetts	4,236	4,099
Michigan	4,779	4,679
Minnesota	2,593	2,550
Mississippi	1,026	975
Missouri	2,671	2,505
Montana	430	407
Nebraska	1,098	1,095
Nevada	151	138
New Hampshire	419	393
New Jersey	4,736	4,478
New Mexico	401	369
New York	14,723	15,207
North Carolina	2,205	2,136
North Dakota	338	312
Ohio	6,526	6,090
Oklahoma	1,307	1,275
Oregon	1,173	1,235
Pennsylvania	9,848	9,718
Rhode Island	601	556
South Carolina	970	807
South Dakota	334	345
Tennessee	1,920	1,795
Texas	5,583	5,324
Utah	626	616
Vermont	356	339
Virginia	1,529	1,502
Washington	2,107	2,025
West Virginia	1,252	1,225
Wisconsin	2,720	2,689
Wyoming	215	205
Canal Zone	6	15
Hawaii	350	339
Puerto Rico	68	53
Alaska	44	55
Total	121,064	117,063

Since July 1, letters have been sent to more than 7,200 members who had not yet paid 1954 membership dues, calling attention to the fact that their names must be taken off the membership roster if payment is not received within a reasonable time. The lists of names have also been checked with the secretaries of constituent associations for possible eligibility to exemption, transfers, or changes in membership classifications. Many physicians who had been notified that payment of their 1954 dues had not been received stated that they had not been billed by their county or state society, that they had overlooked the bill or thought it had been paid at the time other dues were paid, or that they believed they were eligible to exemption. Others who had not paid their county, state, and American Medical Association dues and had moved to a different state found that they had to wait six months or a year to become eligible to membership in the new location.

In 1950, every active member of a constituent association was an active member of the American Medical Association and was required to pay, for the first time, membership dues of $25.00. Those physicians who did not pay 1950 dues were dropped from membership and, if they wished to be reinstated later as members, were required to pay the back dues for 1950 as well as the current year's dues. At the St. Louis Meeting in December, 1953, a resolution was passed which authorized the temporary waiving of 1950 dues for physicians who had been dropped because of nonpayment, provided they paid 1954 dues before July 1, 1954. A number took advantage of the provisions of the resolution and were reinstated as members. Now that the deadline of July 1, 1954, has passed, the waiver of 1950 dues has been withdrawn, and payment of back dues for that year will hereafter be required of physicians who had been dropped because of nonpayment of 1950 dues, unless there are extenuating circumstances.

Another resolution passed at the St. Louis Meeting in December, 1953, recommended that component and constituent associations study the article "Development of Uniformity in Membership Regulations between Constituent Associations and the American Medical Association," which appeared in THE JOURNAL late in 1953. The article pointed out the variety of membership classifications in the constituent associations and the divergent regulations covering transfers of membership, delinquency policies, billing procedures, and privileges of members. Some of the suggestions on uniformity made in the article have been studied by the constituent associations and constitutional changes adopted by their legislative bodies, while other associations have changes under consideration.

Resolutions Nos. 13, 26, and 30 on Hospital Accreditation, Hospital Staff Appointments, and Accreditation of Small Hospitals.—These three resolutions were forwarded to the Joint Commission on Accreditation of Hospitals, and the Secretary is informed that the Joint Commission has held conferences with interested parties concerning attendance at hospital staff meetings (resolution no. 13); is studying carefully the matter of hospital staff appointments (resolution no. 26); and has appointed a subcommittee for the specific purpose of studying problems relating to the accreditation of small hospitals (resolution no. 30).

Resolutions Nos. 2 and 48 on Automobile and Motor Car Safety.—A substitute resolution offered by the reference committee recommending that motor car manufacturers consider equipping all automobiles with safety belts and that they give increasing emphasis to safety in design of all automobiles was transmitted to the Automobile Manufacturers Association, Detroit, and a communication from the Manager of the Engineering and Technical Department indicating interest has been received.

Staff Policy Committee

On Sept. 3, 1954, the Secretary appointed a Staff Policy Committee consisting of executive heads of Councils, Bureaus, and Departments within Association headquarters. The Secretary and General Manager acts as chairman; the Assistant Secretary presides in the Secretary's absence. It is intended that this Committee will operate as a coordinating and planning committee to consider the problems, programs, and plans of the various Councils, Bureaus, and Departments of the Association with a view to increasing efficiency and greater understanding and participation in the over-all functions of the Association. The Committee meets the first and third Wednesday of each month.

Activity in the Field

As in previous years, the Secretary and the Assistant Secretary have been called on to attend and participate in numerous medical meetings, principally those of state and county medical societies and auxiliaries. They have also attended and taken part in meetings of other organizations with which the Association maintains cordial and cooperative relationships and have served on committees and in an advisory capacity. They attend all meetings of the Board of Trustees and of its Executive Committee, as well as, in so far as possible, all meetings of the Association's own Councils and committees.

In Appreciation

Once more the Secretary wishes to express his most sincere appreciation for the assistance given him in the performance of his duties by the General Officers, Board of Trustees, and members of the House of Delegates, not to mention many helpful kindnesses extended by officers and staffs of state and county medical societies. Many members of the "rank and file" of the Association also deserve his gratitude. The headquarters personnel, now numbering approximately 900, has continued to contribute loyally and efficiently to the work of the Association.

Respectfully submitted,

George F. Lull, Secretary.

REPORT OF THE BOARD OF TRUSTEES

To the Members of the House of Delegates of the American Medical Association:

The following annual report of the Board of Trustees is respectfully submitted.

Report on Matters Referred by House of Delegates

All of the resolutions and recommendations adopted by the House of Delegates in June, 1954, for referral by the Board of Trustees to the appropriate councils, committees, and/or persons for study and report have been so referred.

Resolutions on Nursing Care.—Two resolutions on the problem of nursing care, introduced by Dr. Frank J. Holroyd, West Virginia, and Dr. Cleon A. Nafe, Indiana, as well as the substitute resolution on this subject offered by the reference committee and adopted by the House of Delegates, were considered by the Board of Trustees, and, in accordance therewith, the following Committee on Nursing Service was appointed:

Donald C. Smelzer, Chairman, Philadelphia.
Howard K. Gray, Rochester, Minn.
Howard C. Naffziger, San Francisco.
Clayton W. Greene, Buffalo.
Clarence Benage, Pittsburg, Kan.
Julian P. Price, Florence, S. C.

Fee Schedules.—Consideration was given to the recommendation of Dr. Edward J. McCormick, President of the Association, in his address to the House of Delegates in June, 1954, that "average fee lists or fee schedules be studied where such programs are now in effect, with the idea of offering the benefit of study to other areas that may be interested." The Board wishes to call attention to the present program of the Council on Medical Service in this regard. Extensive information on this subject has been collected and is contained in a "fee schedule loan kit" that is made available, on request, to physicians and medical societies.

Problems in Field of Oral Surgery.—In accordance with the directive of the House of Delegates, the following committee was appointed to consider problems in the field of oral surgery:

Gunnar Gundersen, Chairman, La Crosse, Wis.
Leonard W. Larson, Bismarck, S. D.
Walter B. Martin, Norfolk, Va.
Paul W. Greeley, Chicago.
Lawrence Boies, Minneapolis.

Miscellaneous Activities

Student American Medical Association.—The Student American Medical Association, which has been rapidly expanding its activities, has now "come of age" and, as of Oct. 1, 1954, assumed entire responsibility for its affairs. The Board of Trustees is proud of the fact that this organization has become self-supporting in such a short period of time, although, on the other hand, it regrets that the intimate relationship between the two organizations in their daily activities, while not terminated completely, will no longer be as close. The Board wishes every success to this youthful association.

Law Department.—Effective Aug. 1, 1954, the Board of Trustees established a Law Department in the headquarters, with Mr. C. Joseph Stetler as its Director. The Bureau of Legal Medicine and Legislation and all of its personnel and records were transferred to the new department. Mr. J. W. Holloway Jr., who has headed the Bureau for many years and who is rated as one of the country's leading experts on medicolegal problems, will serve as consultant to the department.

The Department will serve the Committee on Legislation, the Judicial Council, the Council on Constitution and Bylaws, and the Committee on Medicolegal Problems. Mr. E. J. Holman was designated Executive Secretary of the Judicial Council and Mr. George Hall, Executive Secretary of the Council on Constitution and Bylaws. For the present, Mr. Stetler will serve in the capacity of Executive Secretary of the Committee on Legislation and the Committee on Medicolegal Problems. The authority and responsibilities of these councils and committees have not been changed. All legal matters that formerly were handled by other departments in the headquarters will be referred to the Law Department.

The Journal of the American Medical Association

The Journal is a weekly record of medical progress, organizational activities, and medical news, and its value is apparent to all. However, the work involved in its preparation and its effect may not be so obvious. Therefore, a few statistics are offered.

During the first eight months of 1954, 5,863 pages were published. Of these, 2,643 pages were devoted to advertising and 3,220 pages to articles on medical practice, medical news, and activities of the American Medical Association. There were six special issues, with five additional special issues to be published during the remainder of the year. The Journal has a large foreign circulation, as it is sent through subscriptions to 119 countries. This is an indication of the interest of persons in other countries in American medicine.

As was reported previously, surveys were made in 1950 and 1953 to determine reader acceptance of THE JOURNAL and its various sections and for other reasons. Much valuable information was obtained, and other surveys at reasonable intervals seem indicated. One interesting aspect of these surveys was the help afforded to the advertising department of the Association through which productive sales appeals could be made to current and new advertisers. The editorial department also profited from the data obtained through the surveys.

More changes in the format of THE JOURNAL were made in 1954. These are dictated by experience and, of course, to some extent by costs. While there have been improvements in design, presentation, and coverage, there is a limit because of cost to, for example, the quality of paper that can be used. Among the new departments that have been adopted in the recent past are "The Leisure Corner" and "Business Practice," which have become increasingly popular. Opening up the front cover to permit a more complete listing of the contents of each issue also has evoked a favorable response. The use of cartoons in the advertising pages has been initiated and promises to bring additional readers to these pages.

The cost of production of THE JOURNAL exceeds the subscription price, which reflects a problem facing all publishers. Therefore, the activities of the advertising department are especially important to the Association as a source of income to help meet the Association's expenses. Plans are now under way to increase the service provided by the advertising department to advertisers.

During the first eight months of 1954 several innovations were made in the News Department that have increased the efficiency of the department and the quality and quantity of its output. The following statistical comparison of the number of pages contributed by that department shows the increase in volume during the past four years:

Medical News

1951	1952	1953	1954
138¼ pages	143¾	162¾	179¼

Obituaries

84 pages	82	85	93

This year the News section carried an unprecedented number of pictures. Many of these illustrated a series of 14 articles on Hill-Burton hospitals. In addition to the items published in the Medical News pages, the department contributed to the Organization Section 22 articles on state societies, giving the history, special projects, officers, and the like and, whenever possible, a photograph of the building housing the offices of the state association. Data were obtained through correspondence with the state societies and through research. This is a continuing project.

The Current Medical Literature section contributes to THE JOURNAL weekly 12 to 16 pages of abstracts culled from universal medical literature. The material for abstracts is derived from some 1,200 publications received by the American Medical Association. An attempt is made to report on the most important clinical work, research, and biological problems that are related to medicine and are primarily of interest to the practitioner. The department also furnishes abstracts for the *A. M. A. Archives of Industrial Hygiene and Occupational Medicine* and translates documents and letters sent to THE JOURNAL by correspondents in various countries, business letters, and all foreign correspondence received by the Association.

The Queries and Minor Notes department of THE JOURNAL received 2,425 inquiries in 1953, the highest number ever received in one year. In 1952, 2,200 inquiries were received. For comparison of figures to note the growth of and continued reader interest in the Queries and Minor Notes department, in 1943 (while no count was kept of the number of inquiries received) there were 276 queries and 22 comments published, utilizing 74 pages of THE JOURNAL, in comparison to 634 queries and 101 comments published in 1953 utilizing 169 pages of THE JOURNAL.

Requests for volume 3 of "Selected Questions and Answers" still are received, but this volume is out of print. There also have been received more than 300 requests for volume 4 of "Selected Questions and Answers," but plans have not been made as yet for the compilation of another volume.

Specialty Journals

During the past year the department of Specialty Journals has directed its attention to the goals set for itself in the last annual report. In keeping with the pattern of eliminating, combining, and simplifying details of operation for greater efficiency and administrative cost reductions, the following improvements in procedures were effected:

1. Reduced manuscript handling by manuscript editors 30%, resulting in a more orderly flow of material.
2. Revised editing style for a more rapid processing of copy.
   - *a.* Substituted bibliography for footnote practices.
   - *b.* Accepted telegraphic style and permitted easily recognized abbreviations.
3. Adopted the use of the drop folio.
4. Tightened the policy governing illustration allowance to author.
5. Simplified the index and rescheduled its appearance to avoid delay in journal publication.
6. Revised instructions to author about proof, controlling its return, rewriting, and last-minute revision.
7. Reorganized book review report form into publishing order, thus saving time of manuscript editors in reorganizing information.
8. Revised "Instructions to Authors" page, bringing about uniformity in all nine journals and thus utilizing one plate in place of nine.
9. Established a flexible contents page (as to size of type), making it possible to accommodate short and long lists of contents without running over to a second page.
10. Fixed responsibilities for editorial boards and manuscript editors to eliminate problems attending the complete processing of manuscripts.
11. Reassigned responsibilities of manuscript editing and editorial production for smooth processing to composing room.
12. Revised record system for more convenient access to information regarding every manuscript in the house.
13. Revised practice of proofreading.
14. Introduced the practice of using duplicate manuscript copies in editing.

These changes have resulted in economies of time and money in the administration of the department with respect to production realized, staff requirements, material handling, etc. For example, the revision in editorial style has decreased staff requirements by four. Substituting the bibliography for footnotes is mainly responsible for this reduction in staff. Acceptance of telegraphic style and easily recognized abbreviations is a saving of time that, together with the simplified bibliography, permits the manuscript editor to combine "footnote editing" with her other duties. Sufficient time was saved to permit the manuscript editor to assume responsibility for galley proofreading also. This combining of details not only saved on corrections but eliminated the need for the page proofreader.

The use of a duplicate manuscript copy was designed to prevent errors appearing in galley proof. The duplicate is edited and submitted to the author before being set. If the author wishes to correct, restore, or revise, he does so before his article is set in type. Previously the author would request such changes following the expense of typesetting at the galley stage. The full benefits of this procedure have not yet been realized. Pressure for edited copy has confined the practice to manuscripts that present many editing problems or to journals for which edited material is well ahead of need for setting.

The use of drop folio, as simple as it is, nevertheless is significant. Previously it appeared on the upper outside edge of the page and was set on the same slug as the running head. Since the page number was not known until the last minute and until galley was made into pages, the only opportunity to proofread the running head was in pages. Frequently a page revise was necessary, using up a day or part of it, before the journal could be released to press. The use of drop folio permits the running head to be set in the galley and proofread early, thus saving time and a revised page proof. The running head on the left-hand page (name of journal) was also set each time for page proof for the same reason. Under the present plan, the name of the journal can now be plated and used over and over again.

The policy of charging authors for illustrations in excess of our allowance was modified to a standard by which the excess could be justly determined. Previously it was fixed at 10 illustrations per article without regard for size or type of cut. The revised policy establishes our allowance at 110 square inches or $100, whichever is of greatest advantage to the author.

At the same time the practice of sending all illustrations to the engraver for all art work, grouping, etc. was discontinued. When doing so, the charge was almost always on the basis of an individual cut for each illustration. By doing the grouping and mounting in the house, it has been demonstrated concretely that many more illustrations are published, fewer authors are charged, and a significant saving in engraving charges has been realized.

The indexing of each special journal volume was one of the most discouraging editorial bottlenecks. To overcome the difficulty, indexing was simplified and is being published separately. The June index was mailed with the July issue. The December index will accompany the January issue. A most modest estimate of the cost of the analytical index used could be fixed at between $4,000 and $5,000 for all nine journals. Moreover, this involved every manuscript editor available with the most meager indexing experience. By simplifying the index and jobbing out the editing on a separate contract, it is now possible to accomplish the job with considerable saving of time for regular copy editing and at a cost of $1,320 per year. The simplification of the index realizes other economies. The indexes are much shorter and consequently require less paper stock and less composition time. Very important is the fact that it permits the journals to be released on time.

As nearly as it is possible to do so, articles are being published in the same order in which they are accepted for publication and received in the house. For most specialty journals the elapsed period from receipt of accepted manuscript to its publication conforms to a four-month policy. Before this could be accomplished, it was necessary to reschedule all old manuscripts that were delayed for long periods because of editing problems. With but few exceptions at present, and only where backlogs are still heavy, most articles are being processed within established time limits. This is being accomplished by restoring several journals to the number of reader pages they enjoyed prior to difficulties with delays in publishing. Other journals, for which material is plentiful, are being increased in the number of reader pages to meet competing journals with comparable subscription rates. The increase in reader pages in a few journals will warrant a restudy of subscription rates to increase them to the level of competition and in keeping with their own increased value.

Plans have also gone forward to improve the specialty journals in appearance and service. Subscribers can look forward to: (1) new cover design, (2) an improved format, (3) more color in illustrations, (4) new features, and (5) expanded coverage of specialty categories.

The cover design will be materially altered to appeal to the eye. It will be more colorful and more helpful to the reader. It will incorporate a feature not known to be used by any other medical journal. It is hoped and expected that its appeal will be such that it will be picked up and examined out of interest in the cover design.

The new format will be based on flexibility of treatment. For the most part it will present a two column page. The journals will not be bound by head, tail, and side margin restrictions. Illustrations may be bled off the page as an attractive layout may dictate. The new format may best be described as variety, utilizing a layout to which each article lends itself best. This is in keeping with modern journal design and is as appropriate to medicine as it is to news and fiction. Although the new format is not to become effective until January, 1955, several articles are currently being treated in this manner. This is being done for training purposes.

The chief editors of the specialty journals are keeping a record of color actually used over the period of a year and of the number of occasions on which they would have preferred to use color in place of black and white, so that the department will have some basis for determining an item in the budget for color use.

To mention but one new feature to indicate a trend, the Association's Scientific Exhibit is worthy of brief note. The Specialty Journals department made its initial effort to cooperate with the Council on Scientific Assembly at the San Francisco meeting. This participation had two goals—the service of editorial boards as expert consultants (the human counterpart of "Queries and Minor Notes" in The Journal) and the selection of scientific exhibits for publication in the appropriate specialty journal. Forty such exhibits were selected and are now appearing as a special feature. They are being presented in as much detail and with the same organization as shown on the exhibit floor of the convention. The scientific exhibits are a natural lead-in to other illustrated presentations.

More attention is now being given to a broader coverage of material available in the subdivisions within a specialty field. Chief editors plan specially prepared articles, such as a series on "treatment." In cooperation with the office of the Editor-in-Chief of the American Medical Association Scientific Publications, section papers of decidedly specialized emphasis will be considered for publication in the specialty journals. Many councils and committees of the Association will be an added source of material.

During the course of the past year the department has been working toward a fixed schedule of publications, spreading the dates so as to create a steady flow of manuscripts through the editorial department to the composing room. Although this has not been completely realized, the plan has been advanced sufficiently to achieve the publication of each journal during the month due. This has been the record for the past 14 months.

During the first eight months of 1954 the specialty journals published 720 original articles, 28 progress reports or general reviews, 125 case reports or clinical notes, 4 special articles, and 9 editorials, or a total of 886. The total of unpublished articles for all specialty journals is 714. It is anticipated that about 500 more papers, including original articles, progress reports, general reviews, case reports, clinical notes, editorials, and special articles, will be published during the remainder of 1954.

Circulation figures as of Sept. 1, 1954, for all nine specialty journals show a slight net decrease (433) as compared with the corresponding period in 1953. This decrease is attributed to the cancellation of subscriptions that have been carried without instructions from the subscriber. Specialty journals showing a decrease are as follows: *A. M. A. Archives of Internal Medicine*, 231; *A. M. A. American Journal of Diseases of Children*, 168; *A. M. A. Archives of Neurology and Psychiatry*, 46; *A. M. A. Archives of Dermatology and Syphilology*, 130; *A. M. A. Archives of Pathology*, 4; *A. M. A. Archives of Otolaryngology*, 240; and *A. M. A. Archives of Industrial Hygiene and Occupational Medicine*, 69. Two specialty journals, *A. M. A. Archives of Surgery* and *A. M. A. Archives of Ophthalmology*, had increases in circulation, 418 and 37, respectively.

Subscription and Circulation

The circulation of The Journal and the nine specialty publications remained at about the same level during 1953 and 1954. Since January, 1952, a large percentage of the subscription accounts had not been paid in advance because billing had been done at irregular intervals. During the latter part of 1953 and in 1954 a special effort was made to bring all subscription accounts to a paid-in-advance status. Subscribers now receive a notice at least one or two months before expiration of the subscription, and beginning in January, 1955, all accounts will be terminated at expiration of the subscription if they have not been renewed. This policy applies not only to accounts in the United States but also to those in Canada and foreign countries.

The subscription list is now in a much more satisfactory condition than in previous years. It is hoped that in the next year, especially after the new Directory has been completed, a drive can be made to secure new subscriptions for The Journal and the other publications. A favorable return received on a test mailing made this year to interns and resident physicians indicates that such efforts, if carried out regularly, would result in future increases in the circulation of the Association's publications.

Today's Health

Editorial Policy

No major editorial changes have been made in *Today's Health* in this year of outstanding gains. The effects of constant small refinements seem, however, to be adding up to a reasonably impressive total. The rising salability of *Today's Health* is probably in part a continuing harvest from changes initiated four years ago. That salability continues to rise is evidence not only that a generally correct line was chosen four years ago but also that it is being maintained with growing certainty of purpose.

and sureness of hand. As this report was being written, the science editor of *Town Journal* (million-plus circulation) called to consult the editors on a series of articles for his magazine and devoted several minutes to the growing attractiveness and usefulness of *Today's Health*.

One factor in the continued improvement of the magazine is the great increase in the number of manuscripts, photos, and drawings submitted and the slow but significant rise in the quality of the few. Several articles, a few series, and a number of editorials have been elicited from state health officers, editors and officers of the constituent associations, and leaders of other major organizations in the health field.

A concentrated effort is being made to fit the content of the magazine to its rapidly growing audience in physicians' and dentists' waiting rooms. Careful attention is being paid to the specific troubles that bring the reader to the doctor's office and to the facts that can make him a more understanding patient. Every issue has articles on one or more of the most prevalent diseases. Every issue deals also with some illness common in later life or with one of the problems of aging or of living with and caring for older persons. Young parents find a monthly page devoted to their needs, plus an occasional special article. Most of the articles and features, however, are designed not merely to reach some special fraction of the magazine's logical audience but to meet the health needs and interests of virtually all ordinarily intelligent persons. Every month one article, usually submitted by the Public Relations Department, is published on some activity involving the Association of interest and benefit to the lay public. The nature of these articles may be indicated by the fact that sometimes they are received from the magazine's own free-lance contributors, whose interest is not to promote the Association but simply to tell a worth-while story.

The regularity with which *Today's Health* has won distinctions in the typographic arts has been a factor in attracting several talented artists this year. New department headings were introduced in February and drew a response far beyond any expected.

More and more articles from *Today's Health* are being reprinted by permission and with credit in other magazines here and abroad. It is quoted with increasing frequency by radio and television commentators and news and magazine writers.

Relations with *Reader's Digest*, the largest of all the digest or any other magazines, have been increasingly satisfactory. The *Digest* has been most receptive to suggestions by the editors and consultants of *Today's Health*, and in this way an additional service to the profession and the public has been rendered.

CIRCULATION

There has been a steady increase in the circulation of *Today's Health* during the first nine months of the current budget year, Dec. 1, 1953, through Aug. 31, 1954. The average net paid circulation for this nine month period has been 264,840. The net paid circulation for the September issue will be about 328,858, with a total distribution of 338,000. This increase in circulation has been made despite the reduction in new direct mail promotion efforts. Increased efforts by the *Today's Health* committees of the Woman's Auxiliary to the American Medical Association at national, state, and local levels have been responsible for a portion of the increased circulation. Also, the nation's magazine subscription agencies now find the magazine much easier to sell, and present commission arrangements have helped the magazine to compete more favorably with other publications. A continued increase in the renewal percentage for the past fiscal year indicates the wider acceptance of the magazine and the healthy growth of the publication. A comparison of the renewal percentages for the last four fiscal years reveals the following:

July 1, 1950, Through June 30, 1951	July 1, 1951, Through June 30, 1952	July 1, 1952, Through June 30, 1953	July 1, 1953, Through June 30, 1954
37.7%	43.9%	47.0%	49.3%

The renewal percentage is expected to reach 50% this year and compares favorably with national magazines such as *Look*, *Life*, *Collier's*, and the *Saturday Evening Post*, which are satisfied when there is a renewal percentage between 50% and 55%.

A survey of the subscribers who received the May, 1953; May, 1954; and September, 1954, issues indicates the following breakdown in the type of subscribers:

Subscriber Classifications	Percentage of Total Subscriptions May, 1953	 May, 1954	 Sept., 1954
Lay subscribers	69.0	66.6	49.7
Nurses	2.0	1.9	1.6
Physicians	10.0	11.5	25.8
Dentists	3.0	3.9	10.5
Hospitals	0.5	0.8	0.6
Schools, teachers	9.0	8.8	7.5
Public libraries	1.5	1.9	1.6
Clergymen	0.5	0.5	0.4
Miscellaneous	4.5	4.1	2.3
Net paid circulation	261,418	279,029	328,858

The substantial increase in the number of copies going to the offices of physicians and dentists is due to the special promotion project of the Woman's Auxiliary to the American Medical Association. Six to eight month trial subscriptions have been placed in a large number of reception rooms, and the *Today's Health* committees of the Auxiliary are personally contacting each physician and dentist to secure a long-term renewal subscription. The thousands of copies now going into the reception rooms of physicians and dentists are reaching a vast audience of readers who are all potential subscribers to the magazine. Special advertisements and insert order forms are being enclosed in the issues so that the waiting patient will have an opportunity to subscribe to the magazine after he has become acquainted with it. This vast circulation is also a potential source of increased advertising revenue.

The number of high schools and colleges using the magazine in the classroom has continued to show a gratifying increase. An average of 3,793 copies per month were used during the 1953-1954 school year. These copies are supplied at a special bulk rate for quantity orders, and the teacher is furnished a list of questions and answers based on each issue, which is used as a supplement to the school texts. A total of 38,227 copies were used by students during the last fiscal year, and since each copy may be used by more than one class the magazine reaches a much greater audience than the actual number of copies sold would indicate.

Today's Health has been displayed at seven national meetings this year. Sample copies of the magazine, promotional material, and subscription forms have been distributed to professional and educational leaders at the following annual meetings:

American Association of School Administrators, Atlantic City, N. J.
American Nurses Association, Chicago
American Medical Association Annual Meeting, San Francisco
National Education Association, New York
American Public Health Association, Buffalo
American Dental Association, Miami, Fla.
American Medical Association Clinical Meeting, Miami, Fla.

The increased activity of the *Today's Health* committees of the Woman's Auxiliary to the American Medical Association has been stimulated again this year by a great deal of special promotional material prepared for them by this department and the Auxiliary's *Today's Health* Committee. A monthly bulletin called "Tips 'N Topics" has kept the auxiliary presidents and local committees informed of the progress made in each area, as well as furnishing many helpful suggestions and aids in securing new and renewal subscriptions. The medical auxiliaries are particularly responsible for the new and renewal subscriptions received from physicians, dentists, schools, and health organizations. The various local auxiliaries have also given many hundreds of gift subscriptions to legislators, public officials, libraries, and service organizations in their communities.

Promotion efforts are being continued to increase the use of *Today's Health* by industrial and business firms. Group subscriptions ranging from 10 to 1,200 copies have been received during the past year, and it is expected that the wider recognition of the health education value of the magazine by industrial physicians and industrial and business leaders will stimulate this project. Also, the nation's leading railroads, airlines, and steamship lines have asked that the magazine be made available in lounges of their passenger carriers, and this will bring the magazine to the attention of a greater number of business, professional, and industrial leaders.

The wider acceptance of *Today's Health* by the lay public portends a continued increase in the circulation at an efficient, economical pace.

ADVERTISING

On the basis of available figures, 1954 has been a good year from the standpoint of *Today's Health* advertising. Gross advertising billing increased from $178,692.44 in 1953 to $213,395.53 in 1954, a dollar increase of $35,243.09 in an 11 month period. Prospects for the December issue are excellent, and, projecting the figures over the 12 month period, net advertising billing for the year will approximate $201,000 as compared to $170,000 last year. During the first 11 months of 1954 the average gross advertising billing per issue was $19,448.53 as compared to $16,244.76 in 1953. As of this date *Today's Health* is averaging 22.6 advertising pages per issue as compared to 19.8 at the same time a year ago. This constitutes a 32 page gain, and the December figures are not yet available. Sixty-one advertising accounts have been established so far this year. This compares with 52 established in all of 1952 and 79 in 1953. A total of 79.1% of the accounts that ran space in 1953 again used *Today's Health* in 1954. About 85% of these renewals were established on 1953 rates prior to Oct. 26 of last year. The new advertising rates will prevail for all accounts effective Jan. 1, 1955, and this should mean a substantial dollar increase for 1955.

SUMMARY

The Editor wishes to call attention to the fact that the staff of *Today's Health* has done an outstanding job, under considerable difficulties, and is entitled to great credit for the undoubted reversal of the trend toward failure and considerable progress on the road back to success.

Library

The library has carried on its usual reference activities through the year, preparing package libraries, loaning periodicals, compiling brief bibliographies, and answering a variety of questions. Over 2,500 letters asking for reference service have been recorded, and about 2,100 of these involved the collection of package libraries. In addition, letters, telephone calls, and personal contacts have answered a greater number of unrecorded inquiries.

Losses of package library material have run rather high in the last two years. The record from January, 1953, through August, 1954, shows that 16 complete packages, for a total of 159 reprints and 31 periodicals, have not been recovered. In addition, 26 reprints and 19 journals have been lost either while in the borrower's possession or in the mail, usually because of insecure wrapping. It is very probable that some of these will appear eventually, as indicated by the receipt this year of one package loaned almost 10 years ago and another loaned in 1950. Most borrowers are conscientious in abiding by the rules and offer reasonable excuses for any delinquency, but a few prove uncooperative and do not reply to repeated reminders, as in 14 instances in the records cited above. Eventually the latter are added to the "black list." Since 1924, when this service was initiated, it has been necessary to place only 35 names on this list.

More than 11,000 periodicals have been loaned to borrowers outside the headquarters offices. The records show that titles borrowed were about evenly divided between those published in this country and abroad. Among the latter there is a wider range because, in some instances, this library has the only file available in the United States. The largest circulation of individual journals is, of course, in the English language group, with such titles as the *New England Journal of Medicine*, the *New York Journal of Medicine*, the *Lancet*, the *British Medical Journal*, *Plastic and Reconstructive Surgery*, the *Bulletin of the New York Academy of Medicine*, and the *Journal of Clinical Investigation* leading. A survey of periodical loans indicated a definite falling off of requests for journals over nine years old. As a result, issues for three years, instead of one as previously, were removed from the files, leaving a complete 9 year collection with the current year's acquisitions as the 10th. These discarded journals were given to the Armed Forces Medical Library, the John Crerar Library, and a medical school library in Korea, as last year.

Indexes to THE JOURNAL have been prepared in the library as usual, each of them requiring about 60 pages. A saving of two pages in each index has been made possible by the omission of dictionary cross-references.

One of the pleasantest events of the year was the February meeting of the Mid-West Regional Group of the Medical Library Association in the American Medical Association Auditorium. The library prepared exhibits of its work for the visitors and arranged with the guide service for tours of the building.

Quarterly Cumulative Index Medicus

The most gratifying accomplishment of this year is the production of volume 45 (January-June, 1949), which was omitted temporarily several years ago. Periodicals have been gradually processed in the meantime, and the editorial work was completed in September. No definite figures are available for this volume, but it is about two-thirds as large as those printed recently, because the usual list of periodicals was curtailed by a selection of those deemed most valuable to users and most likely to be available for consultation.

Due to factors beyond the control of the library, volume 51 (January-June, 1952) was not published until February of this year, although editorial work was completed in August, 1953. Volume 52 (July-December, 1952) was mailed to subscribers in August of the current year. This issue covers 30,560 articles for which 102,725 author and subject cards were typed. A check of language distribution shows that about half of the articles are in English; those in German total almost 5,000 and in French about 3,500; Italian accounts for about 2,700 and Spanish for 1,900. Other languages represented are Portuguese, Russian, Dutch, Danish, Czechoslovakian, Swedish, Norwegian, Polish, Turkish, and Yugoslavian, listed according to numerical rank. The completed volume is about the same size as the one preceding.

Editing of copy for volume 53 (January-June, 1953) began in October, and production should be well under way by the end of the year. Almost all cards for English language journals to be covered by succeeding volumes of the Index are in file, since they are handled currently in order to make them available for reference work. It is hoped that the lag in processing foreign language periodicals will be gradually overcome by the completion of training of new personnel.

Standard Nomenclature of Diseases and Operations

Work on the fifth edition of the Standard Nomenclature of Diseases and Operations is progressing rapidly. The 23 working committees appointed by the Editorial Advisory Board on March 7, 1953, work in close collaboration with the editors. The neurology and surgery sections are being carefully reviewed, which will result in numerous deletions, changes, and additions, the result of scientific knowledge gained in the interim between publications. The first group of approved changes and additions for all sections except surgery was printed in THE JOURNAL, Aug. 14, 1954, and reprints at cost price are being made available. Approved changes, additions, and deletions will be printed at two year intervals until publication of the fifth edition.

The Nomenclature is now being used by about 75% of the hospitals in the country and has a considerable foreign distribution. About 2,400 queries on nomenclature have cleared through the Association's headquarters office during the past year. About 30,000 copies of the fourth edition have been sold to date.

In November, 1953, and June, 1954, standard nomenclature was taught at five-day institutes for medical record librarians in Alabama, Illinois, and Toronto, Canada. These institutes were sponsored jointly by the American Hospital Association and the American Association of Medical Record Librarians. The nomenclature institute teaching was under the direction of the Associate Editor, Adaline C. Hayden. Standard nomenclature classes were also taught by Mrs. Hayden at meetings and local institutes in California, New York, Georgia, and Iowa. Through these mediums approximately 1,200 record librarians and clerks have received instructions in the use of the Nomenclature. An institute on standard nomenclature and anatomy as it relates to the topographic section of the Nomenclature is being sponsored by the American Medical Association at headquarters in February, 1955. An educational exhibit on standard nomenclature will be displayed at the American Association of Medical Record Librarians meeting in Detroit, October, 1954.

The Editorial Advisory Board for the fifth edition, appointed by the Board of Trustees, is composed of Drs. George Baehr.

Chairman, New York; Edwin L. Crosby, Chicago; Selwyn D. Collins and Edward T. Thompson, Washington, D. C.; Austin Smith, Chicago; Richard Plunkett, Editor, Chicago; and Adaline C Hayden, R.R.L., Associate Editor, Chicago.

Report of State Journal Advertising Bureau

The State Journal Advertising Bureau continues to assist its present membership of 33 state medical journals, official publications of 37 state medical societies, under the auspices of the Board of Trustees of the American Medical Association. Organized in 1913, the Bureau secures advertising space sales and handles production details, billing, and collections for the convenience of the journal offices. Helpful hints and information regarding advertising trends are offered in the monthly Bulletin, which also carries a list of the items currently accepted by the American Medical Association councils.

Net sales for the first nine months of this fiscal year, December, 1953, through August, 1954, amount to $525,739.25 as compared with $404,671.79 for the same period of the preceding year and show a gain of 29.92%. A total of 9,050½ pages was sold for the 33 journals during the first nine month of this year, with an increase of 1,566½ pages over last year's figure of 7,485 for December through August, a 23.5% gain. Because the Bureau functions solely for the benefit of the state medical journals, all money is forwarded to the member publications after deduction of operating cost of the Bureau. Complete figures are not available at the present date, but charges for 1954 will no doubt approximate last year's of 7.2% of the net sales, a marked difference to the 15% or 25% commission usually charged for selling advertising space without the additional service outlined above.

The operative principles provide for a governing board, known as the Advisory Committee, composed of five editors or business managers of state journals who are also members of the American Medical Association. Dr. Stanley B. Weld, Connecticut, is chairman of the present committee. Other members are Drs. L. Fernald Foster, Michigan; Douglas W. Macomber, Colorado; C. Grenes Cole, Louisiana; and R. G. Mayer, South Dakota. Dr. Wingate M. Johnson, North Carolina, member-elect, will take office Jan. 1, 1955. Mr. Alfred J. Jackson, Director of the Bureau, serves as secretary of the advisory committee. Ex officio members are Drs. George F. Lull, Secretary and General Manager; Austin Smith, chairman of the Advertising Committee; and Robert T. Stormont, Secretary of the Council on Pharmacy and Chemistry of the American Medical Association.

The following 33 official state publications are members of the State Journal Advertising Bureau at the present time:

Journal of the Medical Association of the State of Alabama
Arizona Medicine
Journal of the Arkansas Medical Society
Connecticut State Medical Journal
Delaware State Medical Journal
Medical Annals of the District of Columbia
Journal of the Florida Medical Association
Journal of the Medical Association of Georgia
Hawaii Medical Journal
Journal of the Indiana State Medical Association
Journal of the Iowa State Medical Society
Journal of the Kansas Medical Society
Journal of the Kentucky State Medical Association
Journal of the Louisiana State Medical Society
Journal of the Maine Medical Association
Maryland State Medical Journal
Journal of the Michigan State Medical Society
Minnesota Medicine
Missouri Medicine
Nebraska State Medical Journal
Journal of the Medical Society of New Jersey
North Carolina Medical Journal
Ohio State Medical Journal
Journal of the Oklahoma State Medical Association
Pennsylvania Medical Journal
Rocky Mountain Medical Journal (Colorado, Montana, New Mexico, Utah, and Wyoming)
Journal of the South Carolina Medical Association
South Dakota Journal of Medicine
Journal of the Tennessee State Medical Association
Texas State Journal of Medicine
Virginia Medical Monthly
West Virginia Medical Journal
Wisconsin Medical Journal

Report of Department of Records and Circulation

DIRECTORY-BIOGRAPHICAL DIVISION

As a preface to the annual report on the Directory-Biographical Division, it is in order to explain the reason for the unusual delay in publishing a new edition of the American Medical Directory. It was hoped that, after the long delay of eight years in publishing the 1950 Directory, it would be possible to return to the regular schedule of a new edition every two years. However, because of the radical change made in the membership structure of the American Medical Association beginning in 1950, it has been necessary to postpone issuing a new edition until the membership status of physicians could be accurately indicated in the Directory. Formerly every physician who was a member of a constituent association was automatically a member of the American Medical Association; in addition, a number of members paid fellowship dues directly to the Association and received THE JOURNAL as a benefit of the annual dues. In addition to the dues-paying fellows, there were associate, affiliate, honorary, and service fellows, but the contact was always directly with the physician himself. Under the new structure that became effective in 1950, the member pays American Medical Association dues of $25.00 a year, but the payment is made to his component county or constituent state society and forwarded to the American Medical Association through the office of the constituent association. All types of fellowship were abolished, and new types of membership—associate, affiliate, honorary, and service—were substituted. At present, active members, including dues-paying members and members exempted from the payment of dues, and associate members hold membership in the American Medical Association dependent on the type of membership held in their constituent associations; affiliate, honorary, and service members are not required to be members of a constituent association, and these types of membership are handled in the same manner as similar types of fellowship had been handled prior to 1950.

Naturally, time has been required to enable the component and constituent associations to set up procedures to handle the billing and collection of American Medical Association dues, and a great deal of correspondence has been necessary to clear up discrepancies in the membership records. Entirely new office procedures had to be established to obtain accurate information concerning the rights and privileges given to various types of members in each constituent association and to verify the bases for exemption or for associate membership. It was also necessary to check the mailing lists of publications for duplications of subscriptions and membership accounts and to notify the physician of any record of previous delinquency in membership or subscription payments. New records had to be established of those physicians who now hold membership in a constituent association but do not hold American Medical Association membership.

During the past three years the Directory-Biographical Division and the Membership-Subscription Division, which form the two units of the Department of Records and Circulation, have worked closely in reconciling discrepancies in identity and in clarifying data relating to location, type of practice, and membership status of physicians. As a result, a reasonably accurate record of membership is now being transferred to the biographical records so that the type of membership held by the physician can be indicated in the next edition of the Directory. The following symbols will designate types of membership:

⊕ Active member of the A. M. A , holding in his constituent association a type of membership that permits him to vote and hold office; name printed in capital letters
🄰 Associate member of the A M A., holding in his constituent association a type of membership that does not permit him to vote and/or hold office, name printed in capital letters
⊞ Service member of the A M. A. (commissioned medical officer of the regular Army, Navy, Air Force, Public Health Service, or full-time medical officer of the Veterans Administration or Indian Service); name printed in capital letters
🄵 Affiliate member of the A. M. A. (physicians in educational or missionary fields, and others not eligible to associate or active membership), name printed in capital letters
🄷 Honorary member of the A. M. A. (foreign physician elected by the House of Delegates); name printed in capital letters
🄼 Member of constituent association only; name not printed in capital letters.
Nonmember of constituent associations, name not printed in capital letters; no symbol.

Beginning this fall, information cards are being mailed to all physicians, giving them an opportunity to furnish up-to-date information on their address, specialty, and type of practice for the new Directory. As soon as these cards have been returned and checked, alterations will be made in the Directory type that is now standing, and the book will then be ready for final proof. It is now planned to have the new Directory ready for delivery about the middle of 1955. Thousands of changes have already been made through data received since the 1950 Directory was published. As of Sept. 1, 1954, biographical information on 40,051 new physicians has been added to the Directory records and 189,539 changes of address have been recorded. Because of death and for other reasons, the names of 18,504 physicians have been deleted.

The Directory-Biographical Division has continued to act as a clearing house of information on physicians for most of the councils, bureaus, and departments of the Association as well as for other official bodies, commercial and philanthropic organizations, government agencies, physicians, and the lay public. During the past year, the information section of the Division has handled an average of 115 telephone calls a day and more than 5,200 mail inquiries concerning physicians during the year. In addition, about 10,000 membership applications have been checked for the Secretary's Office, 5,500 license applications have been processed for the Council on Medical Education and Hospitals, and 2,500 applications have been checked for four of the examining boards in medical specialties. The Division also furnishes the basic information for the IBM card files of physicians maintained by the Bureau of Medical Economic Research. The Division routinely checks information on authors, participants in meetings and conferences, prospective advertisers, and correspondents for various headquarters activities. The new film, "A Life to Save," illustrates graphically the work of the Directory-Biographical Division in maintaining detailed biographical information on physicians in the United States, its dependencies, and Canada.

Report of Department of *Public Relations*

The period covered by this report is Oct. 1, 1953, to Oct. 1, 1954. This year's report is presented as far as possible in brief, statistical form; exhibits of major activities will be prepared for the information of the reference committee at the Miami Clinical Meeting.

The public relations program of the American Medical Association continued to stress the Association's positive, constructive activities, with the general objectives of increasing public understanding of medical problems and policies, improving physician-patient relationships, promoting closer and more effective relations between the Association and its members, providing practical assistance to state and county medical societies for the development of positive public relations programs, and spreading knowledge of all sound methods of solving the socioeconomic problems involved in modern medicine.

ADVISORY COMMITTEE

The program was carried out with the advice and suggestions of the Advisory Committee to the Director of Public Relations, which met five times during the period of this report. Current members of the advisory committee are:

Mr. Lester H. Perry, Chairman
Executive Secretary, Medical Society of the State of Pennsylvania

Mr. Harvey T. Sethman
Executive Secretary, Colorado State Medical Society

Mr. Theodore Wiprud
Executive Director and Secretary, Medical Society of the District of Columbia

Mr. James A. Waggener
Executive Secretary, Indiana State Medical Association

Dr John Conlin
Medical Director, Department of Hospitals, City of Boston

Mr. Rowland B. Kennedy
Executive Secretary, Mississippi State Medical Association

Mr. Merrill C. Smith
Executive Secretary, Nebraska State Medical Association

Mr. James T. Barnes
Executive Secretary, Medical Society of the State of North Carolina

Mr. Ralph W. Neill
Executive Secretary, Washington State Medical Association

PRESS RELATIONS

The press relations work of the American Medical Association has grown with each passing year because of the multitudinous activities of the Association itself. Not too many years ago, the Association's press activities were devoted almost entirely to the preparation and distribution of the weekly news releases containing abstracts of newsworthy material from THE JOURNAL. The writing and distribution of these releases to 2,000 publications weekly is today only a small segment of the Department's work. The services of the Department of Press Relations are utilized now in connection with nearly every policy matter pertaining to the Association. Today, every policy-making activity of the Association is of interest to the public through newspapers and press associations. Statements emanating from Association headquarters must be accurate and held within the interpretation and meaning of policies as adopted by the House of Delegates.

In addition to handling the routine work of preparing news releases pertaining to the annual and clinical meetings and special conferences, such as those on rural health, industrial health, and mental health, the press relations director has prepared and distributed statements outlining the Association's position in connection with veterans' medical care, President Eisenhower's medical and health program, osteopaths and chiropractors, and the national publicity upheaval over fee-splitting and ghost surgery.

Interest of science writers in the two annual meetings of the American Medical Association continues high. The 1954 Annual Meeting in San Francisco was covered by 96 writers, and the St. Louis Clinical Meeting in December, 1953, was covered by 33 writers.

MAGAZINE RELATIONS

A total of 124 requests were received from magazine editors and free-lance writers for help in obtaining medical information, reviewing manuscripts, and checking facts. Articles subsequent to these contacts appeared in such publications as *Life, Look, Saturday Evening Post, Collier's, Cosmopolitan, Reader's Digest, Ladies Home Journal,* and several others of national circulation. Since February, 1954, "This Month in the Magazines," a monthly digest of health education articles and socioeconomic articles on medicine in periodicals of more than one million circulation, has been distributed. The first seven issues of the report showed that 93 such articles were published, not one of which was critical of the medical profession.

TELEVISION AND FILMS

TV Film Library.—The Department, in cooperation with the Committee on Medical Motion Pictures and the Bureau of Health Education, operated a library to provide state and county medical societies with filmed programs for local television stations. Films and bookings were as follows:

"Operation Herbert"	102
"Your Doctor"	61
"What to Do" series (six 5-minute programs)	59
"A Citizen Participates"	56
Total number of TV bookings	278

"A Life to Save," a new half-hour program on medical quackery, was introduced at the Public Relations Institute in September and is now being released through the TV film library. Because of the varying size and drawing power of local television stations, it is impossible to give a close estimate of how many millions of persons viewed the above programs. However, as an example of the great audience potential in television, "Operation Herbert" in only eight showings over six TV stations in August was seen by 970,000 persons.

Network TV.—The Department cooperated in the production of such television network shows as the "March of Medicine" series and a special "Cavalcade of America" program dedicated to the American physician. It also assisted in audience promotion for those programs and the new NBC television series called "Medic."

Films for General Use.—"Operation Herbert" was made available in September, 1954, to the clubs, schools, churches, and industrial plants through Modern Talking Pictures Service, Inc.

"Your Doctor," first of the public relations films to be made available for general distribution, was shown 3,180 times to 204,000 persons.

Vocational Guidance Film.—The Department cooperated with Western Michigan State College and the Society for Visual Education in the preparation of a 35 mm. strip film, "Your Future in the Professions—Doctors." This film is now available to all medical societies.

Literature Distribution

Total number of pieces distributed, Oct. 1, 1953, to Aug. 1, 1954	2,176,551
Number of new titles added since October, 1953	31
Total number of titles available	77
Number of mailings to state and county societies regarding new titles	24
Breakdown on distribution of 21 major items	
New series of four pamphlets	
"Why Wait?"	350,174
"Health Today"	340,986
"Quack!"	335,351
"On Guard!"	334,875
"Rx Public Relations"	188,901
"It's Your A. M. A."	184,416
"Must We Follow the VA Route to Socialized Medicine?"	67,113
"The Amazing Story"	64,890
"Our Positive Program"	56,540
"Your Money's Worth in Health"	56,159
"What About This Doctor Shortage?"	24,973
"How Much Should Your Doctor Charge?"	16,777
"How to Choose Your Doctor"	15,646
"Winning Ways with Patients"	13,772
"Factbook on VA Medical Care"	12,776
"The Medical Profession's Stand on VA Medical Care"	7,722
"Factbook on Medical Education"	7,349
"A Doctor for You"	7,123
"What Does the A. M. A. Do Besides Fight Socialized Medicine?"	6,000
"When You Need a Doctor in a Hurry, What Will You Do?"	5,794
"Medicine and the Public Welfare"	4,965

A comprehensive public relations manual for county medical societies is in production and is scheduled for distribution in November, 1954.

Services to State and County Societies

A. M. A. News Notes.—Twelve monthly issues, providing timely news about American Medical Association activities and services, were sent to about 240 editors and others of medical society personnel for use in state journals and county bulletins.

PR Doctor.—Six regular bimonthly issues, plus a special all-television issue, were sent to about 2,600 persons among state and county medical society personnel to provide them with practical, up-to-date information and examples in the field of medical public relations. The special TV issue, based on a survey of state and county societies, included the largest Exchange section in the publication's history, and a rerun was necessary to meet requests for additional copies.

"PR in Action" Kits.—Ten packets containing information on specific public relations projects were distributed to the state medical societies for use as reference material and for circulation to county societies requesting assistance. The subjects are as follows:

Emergency Call Plans
Mediation Committees
Health Forums
Television
Indoctrinating Members
Press Relations
Speakers' Bureaus
Public Service Projects
Medical Care for All
Citizenship Projects

House of Delegates Report.—At both the annual and the clinical meeting a summary of actions by the House of Delegates was mailed on the final day to delegates, state and county medical editors, and other medical society personnel.

Services to Councils, Bureaus, and Committees

VA Medical Care Program.—In cooperation with the Committee on Federal Medical Services of the Council on Medical Service and the Council on National Defense, the Public Relations Department assisted in the informational program concerning American Medical Association policy on medical care for veterans with non-service-connected disabilities. Principal activities were as follows, in addition to the three items listed under "Literature Distribution":

VA kits distributed	2,806
Stereotypes for state and county medical journals	42 requests
Slides, film strips, and special speaker's kit	35 presentations
Articles in The Journal	3

Rural Health.—The Public Relations Department prepared two items for distribution by the Council on Rural Health: (1) a booklet on medical scholarships and loan funds sponsored by state and county medical societies and (2) a 64 page digest of the ninth National Conference on Rural Health.

Special Conferences.—In addition to the regular news coverage by the press section, the Public Relations Department publicized the various American Medical Association conferences by such means as roundup stories in The Journal, feature stories in *Today's Health*, and roundup stories for lists of special publications. The Department also arranged 10 radio and television programs for the 14th Annual Congress on Industrial Health and 12 for the 9th National Conference on Rural Health. The 12 rural health programs included a seven minute live pickup by the National Farm and Home Hour over the NBC radio network and a five minute feature script carried by United Press wire to 5,000 radio stations.

Services to President and President-Elect

Trips by executive assistant with President and President-Elect	11
Total mileage covered in above trips	23,500
Speeches (research and editorial assistance)	24
Special press releases in connection with speeches	10
Individual press interviews arranged	21
Press conferences held	2
Radio and television appearances arranged	23
Special articles and statements (research and editorial assistance)	7
President's Pages in The Journal (research and editorial assistance)	12
Letters answered (comments and complaints from general public)	150

Special Articles

Today's Health (feature stories on A. M. A. activities)	9
The Journal (medical education, public relations, and VA policy)	6
J. Student A. M. A. (series on medical public relations)	7
Yale Scientific Magazine (the A. M. A. positive program)	1

Public Relations Meetings

The sixth annual Medical Public Relations Conference was held in St. Louis Nov. 30, 1953, with an attendance of 350 persons. This conference is held each year in conjunction with the clinical meeting and concentrates on broad public relations problems of special interest to the physician.

The third Public Relations Institute was held Sept. 1 and 2, 1954, in Chicago, and 250 persons were in attendance. The institute is planned to assist state and county medical society executives and public relations chairmen in the development and promotion of their own public relations programs.

Presidential Inauguration Ceremony

For the second successive year the Public Relations Department handled all arrangements, promotion, and publicity in connection with the presidential inauguration ceremony at the annual meeting. The 1954 program in San Francisco was telecast over Station KGO-TV and was broadcast over almost the entire ABC radio network. Results were as follows:

Nielson rating of ABC network broadcast	1.8
Estimated listening audience	850,000 homes
Estimated rating of KGO-TV telecast	15
Number of TV homes in San Francisco area	885,000
Estimated viewing audience	132,750 TV homes
Estimated total number of listeners and viewers	2,000,000

In addition to the regular news coverage by the press section, special publicity on Dr. Walter B. Martin's inaugural address was distributed.

General and Miscellaneous Services

Women's Activities.—Two staff members attended the Denver meeting of the General Federation of Women's Clubs, showed an educational exhibit entitled "You and Your Medical Care," and distributed 1,200 program kits entitled "Better Health—a Project in Living." Special work with medical assistants included, in addition to extensive correspondence, talks before two groups and personal contacts with two organization presidents.

Guided Tour Program.—Nineteen new guides were trained; there were 600 visitors to Association headquarters; and 300 take-home kits were distributed to visitors.

"To All My Patients" Plaque.—The flyer "What's Your PR Rating?" was sent to 170,000 physicians, resulted in the sale of 5,000 plaques, and brought the total distributed to date to over 20,000.

Secretary's Letter.—The Department continued to assist in the preparation and distribution of the Secretary's Letter, which goes out weekly to more than 3,500 national, state, and county medical leaders.

Special Publicity.—The Department handled all American Medical Association arrangements and publicity for the Chicago visit of Mlle. Genevieve de Galard-Terraube, the "Angel of Dien Bien Phu."

Government Economy.—The Department represented the Association in its close cooperation with the Farm-City Conference Board's government economy program and promotion of the Government Economy Rally in New York City.

Photography.—The Department arranged photographic services at all Association meetings and conferences and provided prints to interested mediums and persons.

Field Services.—To maintain liaison with other national organizations, state and county medical societies, and other groups, the Director of the Department attended the meetings of 37 organizations and delivered 39 addresses during the period of this report.

The Department of Public Relations believes that definite progress is being made. The Association is continually broadening the scope of its contacts with the public and intensifying its efforts to create a favorable climate of opinion toward the medical profession. Every medium of communication is being utilized to achieve this end. Even though critical articles or comments in magazines and newspapers occasionally receive more than their proportionate share of attention, they are far outnumbered by the increasing volume of favorable, constructive information reaching the public eye and ear. At the grass-roots level, significant progress is apparent. With the assistance of the Association, state and county medical societies are carrying on well-planned and expanded public service programs that are winning widespread approval of the people in their areas. The Association's efforts to make individual physicians aware of the need for better personal relations in their everyday practice seem to be creating a more public-relations-conscious medical profession. But the public relations job is never done. It rests on the shifting sands of changing needs and changing opinions. Any summary of progress must necessarily serve only as a stepping stone to future activities. Efforts will be continued to achieve the Association's public relations objectives, and in the coming months particular emphasis will be placed on familiarizing the general public with the reasons for organized medicine's policy on controversial legislation and other issues.

The Department wishes to express its appreciation to the House of Delegates and to the Officers and Board of Trustees of the Association for their cooperation and support during the past year. Its grateful appreciation is also extended to the state and county medical societies and to the many departments and staff members at Association headquarters that have assisted in developing and promoting a well-rounded public relations program for American medicine.

Report of Washington Office

The administration's health program in the 83d Congress, which just ended, was the most ambitious in many years. As a consequence, the Washington Office had heavy responsibilities. It was in direct daily contact with Congress in an effort to promote sound medical legislation and to prevent the passage of bills that would be detrimental to good medical care and good medical practice. As in the past, the legislative efforts of the Washington Office were directed by the Board of Trustees and supported by the Committee on Legislation, state medical societies, and the thousands of physicians from all over the country who have developed an interest in national legislation. The Board of Trustees and the House of Delegates fortunately had encouraged the growth of the Washington Office during the last 10 years, and the staff was adequate in numbers and experience to meet the challenges of the last year. In September, 1954, the Washington Office marked its 10th anniversary. At the outset the Office consisted only of a director; now it includes, in addition to one physician assigned to the Senate and another to the House, a legal staff, an editorial staff, and a publications staff. Among the personnel changes since the last annual report was the resignation of James W. Foristel as legal advisor. Mr. Foristel became assistant general counsel for the Department of Health, Education, and Welfare. He was succeeded in February by Frank Kuehl, an attorney from the Reconstruction Finance Corporation. Harry J. Lambeth, a Chicago lawyer, joined the Washington staff Jan. 1, 1954, as assistant to Director Frank E. Wilson. The staff now comprises 18 persons.

On health legislation the American Medical Association had an active year. The administration's reinsurance bill, which was strongly opposed by the Association, was rejected by Congress. On other portions of the President's health program, Washington Office representatives, in line with the Association's policy, worked actively with committee members and staffs of both houses to effect passage of the administration's plan to extend the Hill-Burton hospital construction program and "Doctor-Draft" act amendment, the Indian hospital bill, and other legislation.

That portion of the new tax revision law which liberalizes deductions for medical expense had been an Association objective for many years. In the social security field the Association was successful in avoiding compulsory coverage under Old Age and Survivors Insurance for physicians, but "waiver of premium" for the disabled, opposed by the Association, was enacted. In the international area the Association-supported Bricker amendment failed in the Senate by a one-vote margin; the shift of one vote would have given the proposal the required two-thirds majority.

The second session of the 83d Congress, which opened Jan. 3, 1954, saw the introduction of President Eisenhower's health program, the first to be presented by a Republican administration in more than 20 years. Of the 5,843 bills introduced in both houses of Congress during the second session, 133 were considered of particular interest to the medical profession. The Washington Office analyzed and reported these 133 bills in the weekly A. M. A. Washington Letter and obtained, in all, about 5,000 copies for distribution. They were sent to persons on request, to the secretary of the Association's Committee on Legislation, and to members of the committee for their use in discussing pending legislation. In mid-February both the Committee on Legislation and the Board of Trustees met in the Washington Office for this purpose.

The Capitol Hill activities of the three physicians of the Washington Office staff moved at a fast pace during most of the second session of the 83d Congress because of the great number of bills of interest to medicine. Much time was spent with congressmen and committee staff personnel, supplying them with information and material on the health reinsurance proposal, the mortgage loan bill to permit government guarantee of private loans to health facilities for construction and equipment, the social security changes, and other legislative proposals of interest to the American Medical Association. Following the House defeat of the administration's health reinsurance bill, the Washing Office prepared a report on the Association's activities in helping to defeat the proposal. This 18-page report was sent to members of the House of Delegates, the Board of Trustees, and the Committee on Legislation and to the secretaries of state medical societies. A similar documented report, reviewing the American Medical Association's part in working successfully to keep physicians from under compulsory social security coverage, also was sent to the above-mentioned personnel. As a part of their daily contact with Congress, the three physician members of the staff attended scores of committee hearings having to do with legislation of interest to the profession. They also oriented Association witnesses in advance of their appearance before congressional committees. Their work also called for contacts with federal executive agencies in order to keep informed as to the intentions of the executive branch on legislation.

To give a personal touch to Washington legislative developments and to explain the activities of the Washington Office, the Director in the fall of 1953 spoke at 10 medical meetings scattered from Seattle to Boston and Texas to Rhode Island. To depict better the activities of the Association's legislative office in Washington at these medical meetings, 34 colored slides are sometimes shown. The slides were made from color photographs taken in the Washington Office and inside the Capitol during the past year. A screen and slide projector also were added to the equipment. The other two Washington Office physicians also made speaking trips, sharing a half-dozen meetings, and Washington Office representatives attended U. S. Chamber of Commerce meetings, veterans medical care conferences, White House conferences, labor union health programs, and public relations meetings.

Except for the health reinsurance measure, legislativewise the American Medical Association supported almost all the administration's health bills. While Congress did not enact all the health bills on the administration's agenda, it passed much more medical legislation than any recent Congress.

The publishing activities of the Washington Office continued as usual, but the year saw the introduction of a new medium—The Month in Washington. In December, 1953, the editorial office prepared its first regular monthly summary of Washington news for use in state and regional journals. The material is so written that it remains newsworthy as late as six weeks from the date it is sent out. The Month in Washington, like the Washington Letter, is sent only on request. Twenty-nine journals now receive the new publication, and 17 reprint it in full, carrying it as a regular monthly feature. Others use it occasionally or print portions of it. The weekly Washington News page for THE JOURNAL and the column on new federal legislation were prepared and sent to THE JOURNAL as in previous years. Although material covered in the Washington News and in the Federal Medical Legislation column is, in general, the same as that presented in the Washington Letter, the manner of presentation is considerably different. More background material is included in THE JOURNAL news, and there is less emphasis on the often complicated legislative issues. The Washington Office also continued the occasional preparation of news releases informing the press and radio of American Medical Association views. Editorial personnel followed their usual policy of scanning state and county medical society publications to obtain their reaction to Washington activities. The staff also studies the press releases and announcements of other associations, the Department of Health, Education, and Welfare, and other government agencies.

Last year the Washington Office conducted a mail survey with the view of restricting circulation of the Washington Letter to interested readers. Persons failing to reply to the questionnaire were dropped from the mailing list, temporarily reducing circulation to 5,012. On Sept. 1, 1953, the circulation of the Washington Letter was at a high of 7,553. Since then, nearly 2,000 communications have been received from physicians and others requesting the Washington Letter. The mailing list is now 6,781, and the Letter is so well received that it is learned that copies go to the desks of President Eisenhower and other high-ranking government officials. It is quoted often by members of Congress, and appropriate extracts have been reprinted in the Congressional Record. A new feature of the weekly Washington Letter has been the "Box Score" page, which was begun late in April. This page lists the top 15 to 17 bills of interest to the medical profession and permits the reader to see at a glance the status or position in Congress of the bill. The page is reprinted periodically as legislative developments warrant.

During the year, the Washington Office continued its practice of publishing special reports as events required. Of the 12 published since the last annual report, the 12-page detailed study of the $1,775,882,197 medical and health budget of federal agencies was the most widely circulated and quoted. Other popular special reports were the two on status of legislation, which followed the close of each session of the 83d Congress, and the report on the legislative history of the presumption of service-connected disabilities for veterans. Other special reports carried the full testimony of Association witnesses appearing before congressional committees, the official position of the American Medical Association on pending legislation affecting the profession, and an appeal to request the defeat of the health reinsurance bill.

To cope with increased circulation and greater editorial activity, the publication section of the Washington Office was expanded. A portion of another floor was rented to provide space for the mechanical equipment and periodical files. A Multilith operator was employed, and the office purchased some new equipment. Addition of this equipment has helped to increase the speed and efficiency of preparing and distributing Washington Office publications.

FEDERAL LEGISLATION

The following important medical legislation was enacted by the 83d Congress during its second session.

Hospital Construction Act.—The 1946 Hill-Burton Act to assist hospitals was expanded to permit the federal government to spend $182,000,000 during the next three years to help finance the construction of hundreds of new nonprofit medical and dental facilities, diagnostic-treatment clinics, vocational rehabilitation centers, nursing homes, and chronic disease hospitals.

Medical Tax Deductions.—As part of a general rewriting of the income tax law, Congress lowered the medical expense tax deduction from over 5% to 3% of income, doubled the maximum limitation on deductions, and liberalized other health and drug tax features.

Vocational Rehabilitation.—New legislation gives each state more assistance and responsibility for its rehabilitation program in an attempt to increase from 60,000 to 200,000 by 1959 the number of disabled that are rehabilitated each year. The law also provides for special training for rehabilitation specialists, increased research on conditions that result in handicaps, and new benefits for the blind.

Indian Hospitals to Public Health Service.—The culmination of years of work by state health officers and others saw the transfer of the Indian hospital and medical service from the Indian Bureau of the Department of the Interior to the Public Health Service of the Department of Health, Education, and Welfare. The Public Health Service will take over Indian hospitals next July 1.

Other.—Other measures of medical interest that became law during the second session of the 83d Congress included a federal charter for the National Fund for Medical Education; a "Doctor-Draft" amendment to strengthen the Defense Department's position in dealing with physicians and dentists who might be security risks; and the prohibition of the shipment of fireworks into a state where the sale of fireworks is illegal.

Congress rejected (1) proposed legislation to force physicians under social security; (2) a proposal to establish a $25,000,000 federal health reinsurance bureau, amounting to a subsidy for insurance companies; (3) a plan for a federal guarantee of private loans to health facilities for construction and equipment; (4) a bill to replace the present separate authorizations for grants to control individual diseases with an authorization for three broad types of grants; (5) the Bricker resolution to restrict the government's treaty-making powers; and (6) an attempt to extend the presumptive period of service connection for certain diseases.

Congress took no action on (1) a series of bills to permit self-employed persons to take tax deductions for their personal pension annuities, (2) legislation to expand medical care to the dependents of military personnel, and (3) a bill to permit the federal government to contribute toward the cost of health insurance for its civilian employees.

The 84th Congress, which convenes Jan. 5, 1955, probably will see the revival of the federal health reinsurance plan, the Bricker resolution, expansion of medical aid for military dependents, private pension tax deductions, health insurance for federal employees, changes in the methods of making Public Health Service grants, and other similar legislation that was rejected or not acted on by the 83d Congress.

The director and staff of the Washington Office wish to express acknowledgment and grateful appreciation to the Board of Trustees, the Committee on Legislation, and the Secretary and General Manager's Office for their support and guidance of our activities in Washington. We express our pleasure in the close association and friendly relations in our work with the councils, bureaus, and committees in Chicago. Also, we wish the state medical societies' staffs could know how deeply we are thankful of their unfailing cooperation.

Report of Committee on Legislation

During the period covered by this report, Oct. 1, 1953, to Sept. 30, 1954, the Committee on Legislation has had one special and three regular meetings, has analyzed 65 major legislative proposals, and has recommended policy positions to the Board of Trustees.

On Dec. 3, 1953, Dr. David B. Allman, Atlantic City, N. J., was elected chairman of the Committee to succeed Dr. F. J. L. Blasingame, Wharton, Texas. Dr. Allman had become a member of the Committee on Oct. 23, 1953, succeeding Dr. Walter B. Martin. During the same period, new members of the Committee were designated as follows: Dr. Harlan English to succeed Dr. Willis H. Huron, Dr. Reuben B. Chrisman Jr. to succeed Dr. Julian Price, and Dr. John E. McDonald to succeed Dr. F. J. L. Blasingame.

There follows a list of the measures dealt with in the 83rd Congress on which either oral or written statements were presented to committees or members of Congress, together with the names of the witnesses, a brief résumé of each proposal, a note as to their status when the 83rd Congress adjourned, and an indication of the nature of the testimony submitted by the American Medical Association. In instances in which the bill was enacted, the Public Law number is given. Bills that were still pending in Congress at the time of adjournment on Aug. 20, 1954, expired and must be reintroduced in the 84th Congress to be reactivated.

S. 2758, H. R. 8149, S. 2759, S. 2778, and S. 3114.—Dr. David B. Allman testified before the subcommittee on health of the Labor and Public Welfare Committee of the Senate on these five proposals on April 15, 1954. These proposals, which were all principal parts of the administration's so-called "health program," are outlined separately.

S. 2758 and H. R. 8149.—The general purpose of these two bills, which are somewhat similar, was to amend the Hospital Survey and Construction Act (Hill-Burton Act), as amended, so as to provide continued assistance to the states in surveying the need for and in constructing diagnostic or treatment centers, hospitals for the chronically ill, rehabilitation facilities, and nursing homes. The position of the Association on the original bills was one of conditional approval. The Association recounted its approval of the original Hill-Burton Act and indicated that any amendments should conform to the original declaration of purpose. It was further stated that the bill S. 2758 would be approved by the Association, provided the following recommendations were adopted: (1) that a purpose section be included, and that such section be clearly written to indicate the intention to construct "community" facilities and establish priorities among the types of facilities authorized; (2) that the terms used in the bill be defined more clearly; and (3) that the relationship of such facilities to conventional hospitals be specified. In a subsequnt letter from Dr. George F. Lull to the committee, on April 29, 1954, the foregoing recommendations were reiterated. It was emphasized at that time that the matter of priorities should be made clear, that the formulation of a definition of "diagnostic and treatment centers" should be approached with caution and within the theory of the original Hill-Burton Act, and that other types of facilities covered by the bills should be part of or operated in connection with an established hospital.

H. R. 8149 was enacted as Public Law 482, 83rd Congress. As a result of recommendations made by the Association, a number of changes were made in the original bill. About 23 million dollars was appropriated to begin carrying out this law.

S. 2759.—The purpose of the bill was to amend the Vocational Rehabilitation Act. Dr. Allman, in his testimony on April 15, 1954, stated that the Committee on Legislation had considered this proposal generally but was not prepared to recommend a definite position, since a sufficiently clear explanation of the measure had not been received. Subsequently, at its meeting in San Francisco on June 23, 1954, after hearing an explanation of the bill by Miss Mary Switzer, the Committee voted to defer action on the proposal.

This bill was enacted, after modification, as Public Law 565, 83rd Congress.

S. 2778.—The stated purpose of this bill was to amend Section 314 of the Public Health Service Act, as amended, so as to extend and improve public health services and to provide for a better use of federal funds. The bill would have authorized in lieu of the present "categorical grants" three new types of grants for (1) public health services in general, (2) extension and improvement of public health services, and (3) "unique projects." The position of the Association was that it approved the stated purpose and the bill in principle subject to certain specific recommended amendments. These amendments were (1) that the proposed type 1 and type 2 grants should be merged into a single category, (2) that the terms used should be more clearly defined, (3) that the Surgeon General should be required to consult with state public health authorities on the proposed type 3 grants, and (4) that the proportion of funds for each type of grant should be spelled out and only a small proportion of the total allocated to type 3 grants.

At the adjournment of Congress, this bill was pending before the Labor and Public Welfare Committee of the Senate. A favorable report by the subcommittee on health was made to the full committee. A similar bill, H. R. 7397, passed the House of Representatives on April 27, 1954. These bills expired with the adjournment of Congress.

S. 3114.—This was the President's so-called "reinsurance bill." The stated purpose of the bill was to "encourage and stimulate private initiative in making good and comprehensive health services generally accessible on reasonable terms" through adequate health service prepayment plans to the maximum number of persons by establishing a $25,000,000 federal "reinsurance fund" in the Department of Health, Education, and Welfare. The Association approved the stated objectives of the bill but opposed the mechanism suggested and questioned the need for such a proposal. Our testimony stated that the American Medical Association has for many years adhered to a policy that parallels the purpose of the bill and has long been in agreement that the most feasible method of accomplishing this result, for most of the population, is through voluntary health insurance. Our statement further indicated that "while it is reassuring to the medical profession to find that the official position of the government is one of trust and confidence in the ability of private initiative to solve existing problems in the field of medical care, it is questionable whether the mechanism suggested in S. 3114 is essential, and whether it will, in fact, accomplish the desired results." The advisability of vesting such sweeping authority in the Secretary of Health, Education, and Welfare was questioned and the observation made that probably few, if any, insurance companies would use the plan.

At the adjournment of Congress this bill was pending before the Senate. The Senate Labor and Public Welfare Committee reported it on July 1, 1954. A minority report was also issued. The bill expired with adjournment of the Congress.

H. R. 54.—The purpose of this bill was to authorize the appointment of "doctors of chiropractic" in the Department of Medicine and Surgery of the Veterans Administration. A written statement on the bill was submitted by Dr. George F. Lull on May 4, 1954, to the Committee on Veterans' Affairs of the House of Representatives, indicating the strong opposition of the Association to the proposal. The letter stated that chiropractic treatment is not based on scientific methods and therefore should not properly be entitled to consideration as anything other than a cult. It was stated that the bill, if enacted, would permit the appointment in the Department of Medicine and Surgery of the Veterans Administration of persons with few or no qualifications, little or no knowledge of the medical sciences, and little or no scientific background.

At the time of the adjournment of Congress, the bill was pending before the Committee on Veterans' Affairs of the House of Representatives.

H. R. 303.—The purpose of the bill was to provide for the transfer to the United States Public Health Service of the functions, responsibilities, and duties of the Department of the

Interior and the Bureau of Indian Affairs relating to the health and hospitalization of Indians. A written statement was submitted by Dr. George F. Lull on May 24, 1954, to the subcommittee on Indian affairs of the Senate Committee on Interior and Insular Affairs. The position of the Association, as set forth in this statement, was one of active approval. The Association expressed the belief that the transfer of such facilities to the United States Public Health Service would result in much-needed improvements in the health facilities and hospitals available to the Indian population of the United States. Administration of these installations by the Public Health Service would facilitate the recruitment of necessary physicians and allied health personnel and would insure a higher degree of medical care for the beneficiaries of the program.

The bill was enacted as Public Law 568, 83rd Congress.

H. R. 7199 (renumbered H. R. 9366).—The purpose of the bill was to provide for a variety of amendments to the Social Security Act. The two aspects of the proposal that were of interest to the medical profession were (1) the proposed compulsory coverage of physicians under Title 2 of the Social Security Act and (2) the so-called "waiver of premiums" section. Dr. F. J. L. Blasingame testified on H. R. 7199 on April 6, 1954, before the Ways and Means Committee of the House of Representatives and on July 6, 1954, before the Senate Finance Committee on H. R. 9366. The position of the Association was one of opposition to the two medical aspects of the original bill. In June, 1949, and again in December, 1953, the House of Delegates adopted resolutions opposing the compulsory coverage of physicians under the Old Age and Survivors Insurance provisions of the Social Security Act. The statement presented by the Association expressed the belief that no sound reason could be advanced for covering a group against their expressed wishes and that physicians would not benefit since the majority do not retire until after the age of 74. Dr. Blasingame also discussed in detail the reasons for opposing the "waiver of premiums" section. It was felt that this provision could become an entering wedge for the regimentation of the medical profession by creating a mechanism for the adoption of a federal cash permanent and total disability benefit program that, in turn, could lead to a full-fledged system of compulsory sickness insurance. The provisions in this bill cannot be appraised solely as an isolated, detached effort to provide some measure of aid to the disabled worker. The Association advanced a suggestion for a new formula for computing OASI benefits that would protect the retirement benefits of persons covered by the Social Security Act without the necessity for physical examinations.

On May 20, 1954, word was received that the House Ways and Means Committee had voted to include in the bill compulsory coverage of physicians. The reaction of physicians throughout the country to this action was so strong that on May 27 the Ways and Means Committee reconsidered and voted to eliminate physicians from the bill. The bill was reported as H. R. 9366 and passed the House of Representatives on June 1, 1954. It was referred to the Finance Committee of the Senate, which reported it without the compulsory coverage provision but with the objectionable "waiver of premium" provision. It passed the Senate in this form and is now Public Law 761, 83rd Congress.

H. R. 7341 (superseded by H. R. 8149, above).—The purpose of this bill was to amend the Hospital Survey and Construction Act, as amended, so as to provide assistance to the states in surveying the need for, and in constructing, diagnostic or treatment centers, hospitals for the chronically ill, rehabilitation facilities, and nursing homes. A letter was submitted by Dr. George F. Lull on Feb. 3, 1954, to the Committee on Interstate and Foreign Commerce, indicating conditional approval pending action by the Committee on Legislation and the Board of Trustees. This action was approved by the Board of Trustees on Feb. 15, 1954.

This bill, H. R. 7341, was superseded by H. R. 8149, which was enacted as Public Law 482, 83rd Congress. See comments above under S. 2758 and H. R. 8149.

H. R. 7397.—The stated purpose of this bill was to amend Section 314 of the Public Health Service Act, as amended, so as to extend and improve public health services and to provide for a better use of federal funds. Dr. George F. Lull submitted a letter on March 9, 1954, to the Committee on Interstate and Foreign Commerce, House of Representatives, indicating conditional approval of the measure. Specifically, a number of recommendations for changes were made. For details see comments above regarding S. 2778, a similar bill.

H. R. 7397 passed the House of Representatives on April 27, 1954, and on the adjournment of Congress was pending before the Senate Committee on Labor and Public Welfare. Hearings were conducted by the Senate committee.

H. R. 7700.—The stated purpose of the bill was to amend the Public Health Service Act to provide mortgage loan insurance for hospitals and other medical facilities used in connection with voluntary prepayment health plans. The bill would have attempted to achieve this purpose by authorizing the Surgeon General of the United States Public Health Service to provide, through the mechanism of a federal medical facilities mortgage insurance fund, federal mortgage insurance of private loans for the construction of additional hospitals and related medical facilities supplying voluntary, prepayment, group-practice medical care. Dr. George F. Lull submitted a letter on April 6, 1954, to the Committee on Interstate and Foreign Commerce of the House of Representatives outlining the opposition of the Association to the bill. The primary reason for this opposition was the fact that there is no demonstrated or approved need for this type of legislation.

On adjournment of Congress, this bill was pending before the Committee on Interstate and Foreign Commerce, House of Representatives. Hearings were held.

H. R. 7914 and S. 1748.—The purpose of these two bills was to provide a federal charter for the National Fund for Medical Education. Dr. Louis H. Bauer testified on these bills on March 1, 1954, before a subcommittee of the House Judiciary Committee. The American Medical Association approved H. R. 7914 but objected to certain of the provisions of S. 1748. Specifically, H. R. 7914 provided that the purposes of the corporation would be "to raise from private sources, disperse and administer funds for medical education and in connection therewith" to promote and foster certain named objectives, while S. 1748 did not include as a stated purpose of the corporation the raising and disbursing of funds from private sources. In addition, H. R. 7914 provided for the inclusion of four physicians on the board of trustees of the corporation.

S. 1748 passed the Senate on July 6, 1953. Both bills were considered by the Committee on the Judiciary, House of Representatives. The amendments recommended by the Association were made to S. 1748, and it was enacted as Public Law 685, 83rd Congress.

H. R. 8356.—This is the House companion bill to S. 3114, the President's reinsurance proposal. Dr. David B. Allman testified on the bill on April 5, 1954, before the Committee on Interstate and Foreign Commerce of the House of Representatives. Dr. George F. Lull sent a letter on July 12, 1954, to all members of the House and Senate, again summarizing reasons why the Association opposed the bill. The position of the Association on H. R. 8356 is the same as that outlined under S. 3114.

The bill was reported by the House Interstate and Foreign Commerce Committee and was brought to a vote on July 13, 1954. It was recommitted to committee by a vote of 238 to 134.

H. R. 8789.—The purpose of the bill was to amend subparagraph (c) of paragraph I, part I, of Veterans Regulation no. 1 (a), as amended, so as to provide that arthritis, psychoses, or multiple sclerosis developing a 10% or more degree of disability within three years from the date of separation from active service shall, in the absence of affirmative evidence to the contrary, be deemed to have been incurred in or aggravated by active service. At the present time, the so-called "presumptive period" for each of these three diseases is as follows: arthritis, one year; psychoses and multiple sclerosis, two years. A written statement was submitted by Dr. George F. Lull on May 7, 1954, to the Committee on Veterans' Affairs of the House of Representatives, opposing the bill. The Association opposed the bill because it would have extended further the present theory of legal "presumption of service connection," which is a scientifically and medically unsound approach to the problem of veterans' medical care. The idea, or practice, of establishing a presumption that a specified disease has resulted from or been aggravated by military service merely because it becomes 10% or more disabling within a given period of time after separation from service becomes increasingly unsound and unrealistic as the presumptive period is increased. The truth of the matter is that the question of whether a given disease, in a given person, at a given time, is the result of or was aggravated by military service is one that, from a medical viewpoint, should properly be answered on the basis of the facts in the individual case.

This bill was reported favorably by the Committee on Veterans' Affairs of the House of Representatives on May 12, 1954. On the adjournment of Congress it was pending before the House Rules Committee. It expired with the adjournment of Congress.

Fluoridation of Drinking Water.—On May 10, 1954, Dr. George F. Lull submitted a written statement to the Committee on Interstate and Foreign Commerce of the House of Representatives on the subject of fluoridation of drinking water. The bill that the committee considered in this connection was H. R. 2341, 83rd Congress. The position of the Association, as outlined by Dr. Lull, is summarized as follows: The American Medical Association in 1951, through its councils on pharmacy and chemistry and on foods and nutrition and through the House of Delegates, reached the following conclusion with respect to fluoridation: Fluoridation of public water supplies in a concentration not exceeding one part per million is nontoxic, and its principle is endorsed. The position of the Association has not changed since that time.

On adjournment of Congress, the bill was pending before the Interstate and Foreign Commerce Committee of the House of Representatives.

Medical Care for Dependents of Members of the Armed Services.—On May 11, 1954, on the request of Dr. Walter B. Martin, and to implement conferences held on the subject, Dr. George F. Lull sent a letter to Sen. Leverett Saltonstall, chairman of the Senate Committee on Armed Services, outlining the actions and position of the Association with respect to medical care for dependents of members of the armed services. It was understood that this material was desired by Senator Saltonstall in connection with a bill then pending before his committee, S. 3363, 83rd Congress. Dr. Lull stated in his letter that in the event formal hearings were conducted on the proposal the Association reserved the right to present further views and material. No hearings were held on the bill prior to adjournment of Congress.

Appropriations for Federal Civil Defense Administration.—On May 4, 1954, a written statement was sent by Dr. George F. Lull to the chairmen of the committees on appropriations, House of Representatives and Senate, urging that the amounts requested for medical activities of the Federal Civil Defense Administration be granted by the committees. Dr. Lull expressed the interest of the medical profession in an adequate medical civil defense program.

Medical Research.—On Oct. 1, 1953, Dr. Edward J. McCormick testified before the Committee on Interstate and Foreign Commerce, House of Representatives, on the general subject of medical research and progress. He offered the complete cooperation of the Association in the inquiry being conducted by the committee and discussed the activities of the Association in the field of research.

Cancer Research.—On Oct. 2, 1953, Dr. Paul Wermer, Secretary, Committee on Research, testified before the Committee on Interstate and Foreign Commerce, House of Representatives, on the specific activities of the American Medical Association in the field of cancer research.

General Health Inquiry.—On Jan. 28, 1954, Dr. Walter B. Martin testified at length before the Committee on Interstate and Foreign Commerce, House of Representatives, on the history, activities, and accomplishments of the American Medical Association since its founding in 1847.

REGIONAL LEGISLATIVE CONFERENCES

Six regional legislative conferences were sponsored by the Committee on Legislation in the first two months of 1954, as follows: Jan. 23, San Francisco; Jan. 24, Denver; Jan. 30, Dallas, Texas; Jan. 31, Atlanta, Ga.; Feb. 6, Chicago; and Feb. 13, New York. The purposes of the conferences were to explain and perfect the system used by the Committee on Legislation in alerting key legislative personnel and to discuss the most important medical issues considered during the second session of the 83rd Congress. The meetings were informal, with active participation invited from the floor. It is the opinion of the Committee that the conferences were extremely successful. Attendance was completely satisfactory, and participation by those attending was active. The Board of Trustees has authorized the Committee to conduct such regional conferences every other year.

APPRECIATION

The Committee wishes to express its appreciation to the Board of Trustees, the Washington Office, and the officers and staff of the Association, as well as the state medical societies, for their cooperation and assistance during the period covered by this report.

Report of Committee on Medicolegal Problems

This fifth annual report will highlight some of the major activities of the Committee on Medicolegal Problems during the past year. The Committee notes with satisfaction a steadily increasing interest on the part of both physicians and lawyers in what may be broadly classified as medicolegal problems. One full meeting of the Committee was held in connection with the Annual Meeting of the Association in San Francisco, at which time reports from subcommittees were received and acted on and further activities contemplated by the Committee were discussed. A second meeting is scheduled to be held during the latter part of this year.

REPORTS OF SUBCOMMITTEES

Subcommittee on Medical Malpractice.—Fifty-six medical schools are collaborating in making available to medical students copies of the report of the Subcommittee on Medical Malpractice entitled "Malpractice and the Physician." As a usual procedure this report is distributed to the graduating classes, but in some instances in which courses in medical jurisprudence are emphasized during the junior year the distribution is made in connection with such courses. About 4,000 copies of the report have been made available during the past year to participating medical schools, without cost. This report is, in the opinion of the Committee, valuable not solely because it points out the pitfalls that should be avoided by the young physician but also because it includes suggested consent forms for operations and suggested forms of letters to be sent to patients who have failed or refused to go along with the advice given by the attending physician.

The exhibit on malpractice prepared under the auspices of the Committee continues to be in demand. It will have been exhibited during the period covered by this report before five medical organizations, including the annual meeting of the Student American Medical Association.

Subcommittee on Courses in Medical Jurisprudence.—Progress has been made in the development of a handbook on legal medicine or medical jurisprudence for use by medical students. A well-known publishing company in the field of medical treatises has become interested in this matter and has approached the Committee with an offer to take care of the publication of such a handbook. A tentative plan has been evolved providing for a listed number of chapters to be included in such a book, and this matter is being given further consideration by the Committee. The Committee believes that there is a definite need for such a handbook, and it is hoped that a definite plan may be evolved shortly for the creation and the publication of such a handbook. It is not contemplated that the handbook will give the medical student a complete knowledge of the many problems in the field of legal medicine that he may need, but at least it will apprise him of the fundamentals in some of the fields and will direct him to sources from which more complete information may be obtained.

Subcommittee on Chemical Tests for Intoxication.—There has been an increasing interest in the exhibit prepared under the auspices of the subcommittee dealing with the use of chemical tests to determine intoxication. Initially one copy of the exhibit was prepared, but very soon it became evident that an additional copy would be needed to supply the demands for the use of it. In this project the subcommittee has cooperated very closely with an appropriate committee of the National Safety Council. Very recently a third copy of the exhibit has been made available that was revised considerably in an effort to make the exhibit more effective. During the period covered by this report one copy of the exhibit has been displayed on at least 14 occasions, before medical organizations, in connection with state fairs, and before meetings of highway police, the Circuit Judges Association, the annual meeting of the Student American Medical Association, and others.

Progress has been made in the preparation of a manual on tests for intoxication to be published under the auspices of the Committee. The Committee feels that there is a definite need for such a manual, which could be made available at a moderate price to physicians who may be called on to perform such chemical tests. The contents of the projected manual have been outlined, and a tentative list of contributors has been prepared. This is merely a progress report on this project, but it is expected that within the coming year the hopes for such a manual will come to fruition.

Subcommittee on Forensic Psychiatry.—Dr. Henry A. Davidson, Arlington, Va., has accepted an invitation to collaborate with the Committee in developing a definite program in the field of forensic psychiatry. Consideration has been given by the Subcommittee on Forensic Psychiatry to a statement issued by the American Psychiatric Association outlining its position on amending state medical practice acts and related matters. In this statement the American Psychiatric Association indicates its belief that state medical practice acts should specifically include the diagnosis and treatment of mental and nervous diseases and disorders within the definition of the practice of medicine. The statement is predicated on four fundamental propositions. The association contends firstly that the diagnosis and treatment of the sick patient entails a legal responsibility that may be assumed only by a person who is licensed to diagnose and prescribe treatments for sick persons and secondly that only physicians who are trained adequately to assume this responsibility may appropriately function in connection with the provision of treatment for persons who are in need of treatment for mental conditions. The statement refers in the third instance to the fact that mental illnesses are well-defined diseases, entities that are clearly described and delineated in recognized publications officially approved by the medical profession. The fourth proposition is that it is a basic tenet of medicine that the psychological and physical components of illness cannot be separated in diagnosis and in treatment. At any point in a disease process, it is suggested, psychological symptoms may give rise to, substitute for, or run coucurrently with physical symptoms, or vice versa. The statement concludes with the suggestion that psychiatry is opposed to the independent, isolated treatment of psychological symptoms by nonphysicians.

The statement of the American Psychiatric Association will be given further consideration by the Committee.

Subcommittee on Forensic Pathology.—The chairman of the Subcommittee on Forensic Pathology has been authorized to suggest consultants to collaborate with him in developing an effective program of activity in the field of forensic pathology.

Subcommittee on the Medicolegal Status of Blood Tests in Disputed Paternity Cases.—The subcommittee has under consideration the preparation of a supplemental report concerning the use of blood grouping tests in disputed paternity cases. This supplemental report will include, it is contemplated, discussions of the use of newer blood tests in cases of disputed parentage and the use of blood tests as circumstantial evidence of parentage and nonparentage, a consideration of a uniform blood test law for enactment in the several states, and a discussion in an effort to clarify blood-grouping nomenclature. The chairman of the subcommittee, Dr. Alexander S. Wiener, has selected a group of experts in the field to collaborate with him in the preparation of the report.

SESSION ON LEGAL MEDICINE

In recognition of the increasing importance of the many situations in which medicine can contribute to a clarification of medicolegal issues, and in recognition of the interest and concern of physicians in such situations, there was arranged for the San Francisco Annual Meeting a session on legal medicine in the Section on Miscellaneous Topics of the Scientific Assembly. This session was arranged under the sponsorship and direction of the Committee on Medicolegal Problems. A program was presented by the Committee consisting of six papers, all of which were designed to serve the practical needs of physicians. The session was well attended, which gives encouragement to the Committee to arrange further sessions of this sort.

MODEL POSTMORTEM EXAMINATIONS ACT

Reference is made in the report of the Bureau of Legal Medicine and Legislation to approval by the National Conference of Commissioners on Uniform State Laws of a model law concerning, essentially, a modernization of the state laws relating to the operation of the office of the coroner. The Committee has been in very close contact with this development, and three of its members met with the special committee of the conference and with the conference itself during the course of a meeting held in Chicago in August. In view of this development, the Committee has under consideration the establishment of a panel of experts who can be made available to state medical associations interested in promoting the enactment of this model law. A preliminary panel has been suggested, and further progress in connection with this project will be reported at a later date. In the meantime, if any state medical association wishes help in connection with a proposal to modernize its coroner system, the Committee will welcome requests for help.

Report of Law Department

As indicated in the report of the Bureau of Legal Medicine and Legislation, a new department of the Association known as the Law Department was created by the Board of Trustees as of Aug. 1, 1954. The activities previously performed by the Bureau, together with various other legal functions of the Association, were assigned to the new department.

At the meeting of the Board of Trustees that was held in Chicago on Aug. 27 and 28, 1954, the specific responsibilities of the Department were established. The Department will provide staff assistance for the Committee on Legislation, the Judicial Council, the Council on Constitution and Bylaws, and the Committee on Medicolegal Problems. Mr. Edwin J. Holman was designated Executive Secretary of the Judicial Council and Mr. George E. Hall, Executive Secretary of the Council on Constitution and Bylaws. The Director of the Law Department, Mr. C. Joseph Stetler, will also serve temporarily in the capacity of executive secretary of the Committee on Medicolegal Problems and of the Committee on Legislation.

The short time that has elapsed since the establishment of the Department has been spent in performing the normal, day-to-day operations that are spelled out in detail in the report of the Bureau of Legal Medicine and Legislation and in organizing the new Department.

Report of Bureau of Legal Medicine and Legislation

As of Aug. 1, 1954, the functions theretofore devolved on and exercised by the Bureau of Legal Medicine and Legislation were transferred by the Board of Trustees to a newly created law department. This, therefore, is the last report of the Bureau as such. During the period covered, the Bureau has continued its efforts to contribute to the leadership in legal medicine that has been gradually developed over more than a quarter of a century. Contacts have been maintained with individual physicians, with constituent and component societies, and with other groups interested in promoting a sound program in the field of legal medicine in this country. As directed by the House of Delegates, the Bureau has collaborated closely with the Committee on Medicolegal Problems.

Certification of Checks in Payment of Harrison Narcotic Act Tax

On a number of occasions the House of Delegates has protested against the requirement that a physician, in payment by check of the annual tax of $1.00 for the privilege of prescribing or dispensing narcotics, have that check certified. As previously reported, the Bureau has been attempting to have the requirement eliminated, and success of those efforts may now be reported. A section contained in a bill recently passed by the House and Senate (H. R. 8300) and approved by the President provides, in effect, that under appropriate regulations uncertified checks may be accepted in payment of the taxes imposed by the federal narcotic act. It is anticipated that appropriate regulations will soon be issued and that information concerning them will be promptly brought to the attention of the medical profession. The new law was signed by the President on Aug. 16, 1954, as Public Law No. 591.

Deductibility of Postgraduate Medical Expenses

In a previous report of the Bureau, reference was made to a court decision in which it was held that a lawyer could deduct, for federal income tax purposes, expenses incurred by him in attending a postgraduate course on taxation. The American Medical Association participated in this case as *amicus curiae.* Following this decision, there arose some questions of interpretation as to the applicability of the decision to similar expenses incurred by physicians. There were areas of confusion that needed clarification. In an effort either to eliminate entirely or to reduce materially such areas, representatives of the Bureau and of the Council on Medical Education and Hospitals, together with tax counsel, met with a representative of the office of the U. S. Commissioner of Internal Revenue to discuss a regulation to clarify the situation. Under date of July 26, 1954, advice was received from tax counsel that a regulation would be issued in the near future, and it is anticipated that appropriate information concerning the regulation will be made available to the medical profession.

A. B. A. Committee on Narcotics and Alcohol

The American Bar Association has created in its section of criminal law a committee on narcotics and alcohol, of which Mr. Rufus King, Washington, D. C., is chairman. The Bureau has been cooperating with this committee, and two of the members of the Bureau have been appointed to it as members. At the present reporting, the primary objective of the committee would seem to be a study of state and federal laws relating to narcotics and alcohol to determine the extent to which emphasis may be shifted from the application of penal sanctions against violators to the provision of rehabilitation procedures. This will be a continuing study for at least another year.

Volume 5, Medicolegal Abstracts

The fifth volume of abstracts of medicolegal decisions was completed during the past year and will be available for distribution during the fall of this year. The volume includes the abstracts of court decisions of medical interest published in The Journal from 1947 to 1952, inclusive, and is indexed to reflect primarily the medical issues involved in the cases abstracted for publication.

Entrapment of Pharmacists

Several instances have been brought to the attention of the Bureau in which representatives of a federal bureau have solicited physicians to issue prescriptions for drugs dispensable only on prescription, such as narcotics and barbiturates, to representatives of a federal bureau not to serve a medical need but to be used for developing possible infractions of the law by pharmacists.

It seems appropriate and timely to point out that laws relating to nonexempt narcotic drugs and to the barbiturates have been premised on the acceptance of the fact that the drugs should be made available only to serve a medical need. A physician, properly qualified, may lawfully prescribe such a drug to a patient whom he personally attends and then only when in his judgment the medical needs of the patient necessitate the use of the prescribed medicament. When a physician is asked to issue a prescription for a drug that is dispensable only on a prescription basis to a person not a patient and not to serve a medical need, he is obviously importuned to commit an infraction of the law, even though the end sought to be served may be a detection of another violation of the law. Granting that an ethical and moral obligation rests on a physician to contribute to law enforcement in a field in which he is particularly qualified, it would seem somewhat distasteful to contemplate that in helping in law enforcement a physician should be asked himself to commit a violation of the very law for the enforcement of which his aid is sought. Furthermore, it is difficult to imagine anything that would do more to disrupt friendly professional relationships between medicine and pharmacy than the participation of a physician in what, essentially, is a scheme of entrapment. Such a scheme smacks of an underhandedness that might give an ethical practitioner of medicine pause.

There are obviously problems in connection with the enforcement of laws circumscribing the availability and use of drugs on a prescription basis. Medicine wishes to do what it can appropriately do to facilitate adequate enforcement. Possibly a series of conferences could be arranged with the federal agencies involved and the medical and pharmaceutical professions to discuss enforcement problems and practices.

Registration and Medical Licensure in Relation to Federal Narcotic Laws

In past years questions have arisen concerning the right of federal officials to deny, under the Harrison Narcotic Act, the right of physicians convicted of violations to register thereafter and pay the annual tax of $1.00 imposed by the act. A typical example may be cited: A physician has been convicted one or more times of a narcotic violation. He thereafter applies for reregistration under the Harrison Narcotic Act. The application has been denied, and the question has come before the courts. Without a dissent, the courts have held that, if a physician is authorized to use narcotic drugs by the state law under which he is licensed, federal jurisdiction does not embrace the right to deny him registration under the Harrison Act, even though he may previously have been convicted of flagrant violations of that act. Some lower federal courts have effectively circumvented this proscription by imposing a substantial fine or imprisonment, or both, on a physician violator and then suspending the sentence on the condition that the physician surrender his registration stamp and agree not to apply for reregistration thereafter for a specified period of years. Obviously, if a physician is sentenced to serve a term in a penitentiary or is required to pay a substantial fine and is offered the alternative of avoiding such a sentence by surrendering his permit, he has very little choice. Whether the conditional imposition of such a sentence is legal presents a question that the Law Department may feel it desirable to explore.

A recent situation came to the attention of the Bureau in which a court conditioned a possible imposition of a penal sanction for a violation of the narcotic law on agreement not only that the physician not comply with the federal requirements for a continuation of the use of narcotics but also that the physician surrender his state license to practice medicine. This action assumes a federal jurisdiction over the determination of who may or may not practice medicine, a determination the courts have held to be a function of the states and not the federal government. There were circumstances in this particular case that may have influenced the action of the court, and that action may have served a communal and social interest, but it does present an issue that should be carefully and intelligently considered by the medical profession.

Importation of Narcotics by Physicians

A situation has been brought to the attention of the Bureau in which a physician, resident of the United States, went to Mexico on a vacation and carried with him a small quantity of narcotic drugs. On his return to the United States, the unused portions of such drugs were seized by the customs officers. The physician has been unable to reobtain the seized drugs. The U. S. Bureau of Narcotics advises that not even a physician may lawfully, under existing law, bring narcotics into this country without an import permit and that a physician who attempts to take narcotics out of this country without an import permit from the foreign government and an export permit from the United States may expect to anticipate the seizure of the drugs by the foreign government. This is a matter that merits, in the opinion of the Bureau, further and careful consideration.

USE OF TAX-FREE ALCOHOL BY HOSPITALS

A question has been raised as to the right of a hospital, through its laboratory, to use tax-free alcohol in the examination of specimens submitted by private physicians on behalf of persons who are not inmates of the hospital. Advice from the appropriate federal agency is that such use is not permissible under existing law. Tax-free alcohol may be withdrawn at the present time from any industrial alcohol plant or bonded warehouse, tax free, for the use of any scientific university or college of learning, for use exclusively in scientific research in a laboratory, for use in any hospital or sanitarium, or for the use of any clinic operated for charity and not for profit, including use in the compounding of bona fide medicines for treatment outside of such clinics or patients thereof, but not for sale. It has been held that a privately owned hospital may not use tax-free alcohol to make pathological examinations or tests for other hospitals or for persons who are not "patients" of the hospital. Such a hospital laboratory, it has been suggested, in doing this type of work cannot be distinguished from the activities of the ordinary commercial laboratory.

The Bureau recommends no action on this problem at this time. It apparently involves only the use of tax-free alcohol by hospitals and is therefore a hospital problem primarily. Focus is directed on this matter principally because of the belief that if a hospital may be accorded the right to use tax-free alcohol in connection with noninmates a similar privilege should be accorded to pathologists in private practice.

MODEL MEDICAL EXAMINER LAW

Reference was made in the report of the Bureau for last year to the appointment of a special committee by the National Conference of Commissioners on Uniform State Laws to draft a model state medical examiner law under which the cause of a death may be determined when it occurs under unknown or suspicious circumstances. With the collaboration of the Bureau and of the Committee on Medicolegal Problems, a third draft of such a law has been perfected that was unanimously approved by the conference at a meeting held in Chicago the early part of August. Requests for copies of this model act may be directed to the Committee on Medicolegal Problems.

NEW PERIODICAL IN THE FIELD OF LEGAL MEDICINE

As further evidence of the growing interest in the field of legal medicine, attention is called to a new quarterly to be made available by a well-known company that publishes legal publications, *Medical Trial Technique Quarterly*. The initial issue of this quarterly (September, 1954) includes discussions of certain medicolegal aspects of brain injuries, of the aggravation of preexisting ailments by trauma, of the utilization of medical textbooks in evidence, and of other matters that are of value. This quarterly is intended primarily to serve objectively the needs of lawyers, but physicians who have a definite interest in legal medicine may with advantage become familiar with it. The publishing company consulted with the Bureau in the planning stages of the quarterly.

MEDICAL AND LEGAL RELATIONS

The Bureau has continued, by correspondence and participation, to promote periodic joint meetings between physicians and lawyers at which subjects of mutual interest and concern may be explored. There seems to be evidenced a trend toward more frequent meetings of this sort. This is a healthy development that should be nurtured by medical and legal organizations.

Over a period of several years joint conferences have been held between representatives of the Medical Society of Wisconsin and of the Wisconsin Bar Association, and as a result there is being evolved a code of interprofessional ethics. The Bureau has been in touch with this development as a consultant. A fifth draft of such a code has, to date, been under consideration. A final draft may be available by the time this report is considered. The latest draft deals with such subjects as the obligations of the attending physician to his patient, the obligations of an attorney to his client, the necessity of conferences between physicians and attorneys, reports that a physician might be required to make to attorneys, the physician and court arrangements, the situations that might develop when an attending physician is called as a witness, the fees that an attending physician should charge in connection with services performed in relation to litigation, the obligation of an attorney to pay for the services of the witness of a client, the general cooperation that should exist between attorneys and physicians to assure adequate payment of fees to physicians in connection with the activities of a physician as a witness, the general question of expert testimony, the ethical limits of medical testimony, the question of efforts made by attorneys to influence medical testimony, the problem of conflicting medical testimony, the choice of language by medical witnesses, and the question of what should be done by a medical witness or by an attorney in case questions arise during the course of a legal proceeding that, in the opinion of the medical witness or in the opinion of the attorney, should be brought to the attention of either a medical or a legal association.

Mention is made rather sketchily of this code that is in the process of evolving in Wisconsin to indicate some of the questions that could with value form a basis for any discussion, preliminarily at least, between a medical society and a local or state bar association. This code covers some very fundamental situations that have arisen and may arise in the future to cause misunderstanding between lawyers and physicians, and the creation of the code, in the opinion of the Bureau, will constitute a distinct contribution. The Bureau gives emphasis in this its final report to the importance, in the field of legal medicine, of a better understanding between physicians and lawyers. It believes that joint meetings can serve not only to reduce areas of misunderstanding but also to improve understanding on the part of both physicians and lawyers of many areas in which medicine and the law admix.

MEDICOLEGAL ABSTRACTS

Since 1926 the Bureau has been preparing abstracts of court decisions in the medicolegal field for publication in THE JOURNAL. Four volumes of Abstracts of Medicolegal Cases contains the abstracts published in THE JOURNAL during the years 1926-1946. A fifth volume nearing completion will contain the 1947-1952 published abstracts. During the year covered by this report the Bureau has continued to perform this abstracting service, which contact with JOURNAL readers indicates to be a worth-while educational feature. Following are references to a few of the cases abstracted and published during the year.

The supreme court, appellate division, third department, New York, upheld disciplinary action against physicians who had been convicted of a contempt of Congress for refusal to produce certain records before a congressional committee.[1] The United States district court for the northern district of Ohio, eastern division, held that part-time industrial physicians are not covered by the Social Security Act and that the employing company is not required to pay federal employment taxes on their salaries.[2] The Supreme Court of the United States affirmed a lower court decision dismissing a government complaint asserting medical society participation in a conspiracy to restrain and monopolize the business of providing prepaid medical care in Oregon and to restrain competition between physician-sponsored prepaid medical plans.[3] The Supreme Court of New Mexico refused to admit in evidence in a murder case answers to questions propounded to the defendant while he was under the influence of thiopental (Pentothal) sodium.[4] The court of appeals of New York held that a jury is entitled to all the facts on which a psychiatrist bases an opinion of mental condition, even though one of the interviews was held while the defendant was under the influence of amobarbital (Amytal) sodium.[5] The court of appeals of Ohio, Franklin County, held a naturopath guilty of a violation of the medical practice act for advertising himself as "Dr."[6] The New York supreme court, appellate division, refused to hold the state liable for a death from a virus infection caused by transfusion of pooled blood plasma distributed to a hospital by the state at the request of the Red Cross.[7] The Supreme Court of Ohio held that liability under a malpractice policy was not confined to failure to exercise proper professional skill. It also covered injuries to patients arising from the insured's negligence in maintaining safe apparatus for use in his office.[8] The Supreme Court of Minnesota affirmed the declaratory judgment of a lower court holding that vitamins are drugs and may not be sold in grocery stores.[9] The United States court of appeals for the 10th circuit upheld a decision denying the Spears Chiropractic Clinic a judgment for damages against the Medical Society of the City and County of Denver and others for an alleged Sherman Act violation. The practice of chiropractic was held not to be interstate commerce.[10] The law division of the county court of Essex County, N. J., held that blood grouping tests showing nonpaternity are conclusive evidence of that issue.[11] The superior court of Pennsylvania held that the amount of the fee to be received by a medical expert for testifying has a direct and vital bearing on his credibility, interest, bias, or partisanship and is therefore a proper subject of cross-examination.[12] The supreme court, special term, New York County, N. Y., upheld the validity of a 1952 law authorizing the state commissioner of health to designate approved laboratories or institutions wherein scientific tests on living animals may be performed and further authorizing the requisition of impounded dogs for such laboratories or institutions.[13] The district court of appeals, second district, division 2, California, refused to apply the doctrine of *res ipsa loquitur* to injuries sustained following the administration of an electric shock treatment.[14] The district court of appeals, first district, division 2, California, held, in an action for damages for roentgen ray burns, that the statute of limitations commences to run from the date of the discovery of the wrongful injury or from the date when by the exercise of reasonable care the injury should have been discovered.[15] The Supreme Court of California, discussing the removal of a blood sample from the arm of an unconscious person for chemical testing and other purposes, held that the taking of such sample in a medically approved manner is not so brutal and shocking to the conscience as to support a claim of violation of due process of law.[16] The appellate court of Illinois affirmed a decision of the Illinois Supreme Court made in 1900 holding that no action can be maintained for injuries to an infant sustained while the infant is *en ventre sa mere*.[17] The Supreme Court of Missouri held that hospital records that indicate how an injury occurred, and thus constitute an aid in diagnosis and treatment, are admissible in evidence when it further appears that the records were made in the regular course of the hospital's business.[18]

---

[1] Miller v. Board of Regents of University of State of New York; Auslander v. Board of Regents of University of State of New York, 111 N.Y.S (2) 393.

[2] Willard Storage Battery Company v. Carey, Collector of Internal Revenue, 103 F. Supp. 7.

[3] United States v. Oregon State Medical Society et al., 72 S. Ct. 690.

State Legislation

State legislative proposals of interest to medicine have also been of continuing interest to the Bureau, which for many years has subscribed to a state legislative reporting service covering this field. Copies of all bills introduced in the several state legislatures that relate to any of a designated list of subjects, ranging from animal experimentation and autopsies to workmen's compensation, are received a few days after their introduction. Any of these bills that become laws are noted and copies of the new laws placed in the Bureau files. Brief abstracts of these proposals and laws are published in The Journal from time to time. Annually since 1929, with a few exceptions, a detailed survey of both bills introduced and bills enacted is prepared for the Bureau files, and occasionally this survey, in condensed form, is published in The Journal and reprinted in the *Bulletin of the Federation of State Medical Boards of the United States.* These surveys have proved of assistance to the legislative committees of state societies when charged with the responsibility of preparing legislation on many subjects. The survey of proposals considered and laws enacted by the 14 states that were in regular session in 1954 (together with a few states in special session) is in the course of preparation.

Conclusion

After nearly 30 years of close affiliation with medicine it is somewhat difficult to sign off coherently, even for one who was exposed to a legal education. The Director has profited immeasurably from his contacts with members of the American Medical Association and with those who have been selected to act for them. He expresses the sincere hope that the Bureau under his direction has contributed an influence to the advancement of legal medicine and that the new Law Department will be accorded the same fine cooperation the Bureau has received over these many years.

A number of years ago the Director read a book, the title and author of which have been forgotten. One passage of the book lingers in memory. It went something like this: "Friends of my youth, a fond adieu. May happily we meet again. But ne'er the selfsame men shall meet, for time shall make us other men."

Report of Committee on Mental Health

Since its last annual report the Committee on Mental Health has held three regular meetings, in September, 1953, and January and May, 1954. Based on a motion voted by the Section on Nervous and Mental Diseases at the 1953 Annual Meeting in New York concerning enlargement of the Committee on Mental Health, the Board of Trustees appointed one new member, Dr. Francis J. Gerty, to the Committee. Dr. Gerty was selected from a list of names recommended by the Section.

Following an exchange of letters among the president of the American Psychiatric Association, the President of the American Medical Association, and the headquarters office concerning a closer liaison between the two organizations, the American Psychiatric Association appointed an ad hoc committee for liaison with the American Medical Association composed of Drs. Walter Barton, chairman; Francis Gerty; Howard W. Potter; Robert Felix; David Flicker; and Daniel Blain to work directly with the American Medical Association. A liaison committee of the American Medical Association to the American Psychiatric Association was appointed, which is also the executive committee of the Committee on Mental Health and is composed of Drs. Leo H. Bartemeier, Lauren H. Smith, and Walter H. Baer.

Licensure or Certification of Clinical Psychologists

Following the statement of the Committee on Mental Health concerning licensure or certification of psychologists that was published in The Journal, Dec. 27, 1952, page 1686, and because of an increasing recognition by psychiatrists and physicians generally of the fact that there was a growing tendency for clinical psychologists to enter the unsupervised practice of psychotherapy, the Committee on Mental Health, working with

---

4. State v. Lindemuth, 343 P. (2) 325.
5. People v. Ford, 107 N E. (2) 595.
6. State v. Furand, 105 N.E. (2) 656.
7. Parker v. State, 112 N.Y.S. (2) 695.
8. American Policyholders Insurance Company v. Michota, 103 N.E. (2) 817.
9. Culver et al. v. Nelson et al., 54 N.W. (2) 7.
10. Spears Free Clinic and Hospital v. Cleere et al., 197 F. (2) 125.
11. Ross v. Marx, 90 A. (2) 545.
12. Reed v. Philadelphia Transportation Company, 90 A. (2) 371.
13 New York State Voters League VS Vivisection et al. v. Hillboe, 114 N Y.S. (2) 805.
14. Farber v. Olkon, 246 P. (2) 710.
15. Costa v. Regents of University of California et al., 247 P. (2) 21.
16 People v. Haeussler, 260 P. (2) 8.
17. Amann v. Faidy, 107 N.E. (2) 868.
18. Melton v. St. Louis Public Service Company, 251 S.W. (2) 663.

similar committees of the American Psychiatric Association and the American Psychoanalytic Association, drew up a joint statement of policy with respect to the practice of psychotherapy that was approved by the Board of Trustees in June, 1954, for publication over the signatures of the presidents of the three organizations. This was similarly approved by the executive bodies of the American Psychiatric Association and the American Psychoanalytic Association. The joint statement is as follows:

JOINT STATEMENT ON RELATIONS OF MEDICINE AND PSYCHOLOGY

For centuries the Western World has placed on the medical profession responsibility for the diagnosis and treatment of illness Medical practice acts have been designed to protect the public from unqualified practitioners and to define the special responsibilities assumed by those who practice the healing art, for much harm may be done by unqualified persons however good their intentions may be. To do justice to the patient requires the capacity to make a diagnosis and to prescribe appropriate treatment Diagnosis often requires the ability to compare and contrast various diseases and disorders that have similar symptoms but different causes Diagnosis is a continuing process, for the character of the illness changes with its treatment or with the passage of time, and that treatment which is appropriate may change accordingly.

Recognized medical training today involves, as a minimum, graduation from an approved medical school and internship in a hospital Most physicians today receive additional medical training, and specialization requires still further training

Psychiatry is the medical specialty concerned with illness that has chiefly mental symptoms. The psychiatrist is also concerned with mental causes of physical illness, for we have come to recognize that physical symptoms may have mental causes just as mental symptoms may have physical causes The psychiatrist, with or without consultation with other physicians, must select from the many different methods of treatment at his disposal those methods that he considers appropriate to the particular patient His treatment may be medicinal or surgical, physical (as electroshock) or psychological The systematic application of the methods of psychological medicine to the treatment of illness, particularly as these methods involve gaining an understanding of the emotional state of the patient and aiding him to understand himself, is called psychotherapy. This special form of medical treatment may be highly developed, but it remains simply one of the possible methods of treatment to be selected according to medical criteria for use when it is indicated. Psychotherapy is a form of medical treatment and does not form the basis for a separate profession

Other professional groups such as psychologists, teachers, ministers, lawyers, social workers, and vocational counselors, of course, use psychological understanding in carrying out their professional functions Members of these professional groups are not thereby practicing medicine. The application of psychological methods to the treatment of illness is a medical function Any physician may utilize the skills of others in his professional work, but he remains responsible, legally and morally, for the diagnosis and for the treatment of his patient

The medical profession fully endorses the appropriate utilization of the skills of psychologists, social workers, and other professional personnel in contributing roles in settings directly supervised by physicians It further recognizes that these professions are entirely independent and autonomous when medical questions are not involved, but when members of these professions contribute to the diagnosis and treatment of illness, their professional contributions must be coordinated under medical responsibility.

Washington Conference on Mental Health

In October, 1953, the Committee on Mental Health in joint sponsorship with the American Psychiatric Association held a two day conference on mental health for the purpose of bringing together all national groups, both private and governmental, that had a direct interest and stake in the improvement of mental health and in treatment of mental illness. The conference was attended by representatives of law, nursing, psychology, government, and all fields of education. A study among the more than 40 organizations represented at the conference indicated that the four top areas now needing more attention in mental health fields are (1) education of the public for improved mental health and prevention of mental illness, (2) teaching of mental health practices in colleges and universities, (3) interdisciplinary cooperation in all mental health programs, and (4) research in treatment and prevention. The conference centered around a series of open forum discussions on the general subjects of training of mental health workers, treatment, prevention, and research Discussion revealed many areas of overlapping effort among participating organizations and also areas wherein a much closer collaboration can bring promising results. There was demonstrated a serious lack of understanding, particularly between medical and nonmedical groups, of what each was doing or attempting to do and a lack of understanding of what each group's proper role might be in relation to others. Clarification of these differences was the main purpose of the conference and will continue to be in further conferences with these groups. The response by the delegates to the conference was enthusiastic, and plans are now under way to hold a second conference of the same organizations and delegates in October, 1955.

Pilot Research Project on Effects of Crime Portrayal in Mass Mediums on Children and Adolescents

Following approval by the Board of Trustees of a pilot research study to be conducted under the auspices of the Committee on Mental Health, members of the Committee met with associate dean David F. Cavers of Harvard Law School; Dr. Arthur J. Brodbeck, assistant professor of psychology at Boston University; Dr. Nathan Maccoby, director of division of Boston University School of Public Relations and Communications; and Dr. Eleanor E. Maccoby, department of social relations and laboratory of human development of Harvard University, to discuss details of the pilot research project. It was decided that the children who will be used will be selected from a group of some 200 to 300 children that the laboratory of human development of Harvard University has had under observation for the past two or three years. It was decided that the primary purposes of the pilot study would be to find out how deeply children identify themselves with characters presented in films or television programs, to analyze film content to find out the value or skill elements that are available to be learned by the viewer, to determine the amount of guilt or anxiety that is aroused in children viewing such films, and to measure the effects of the film or program in terms of the amount and kind of material retained by the children who may identify themselves with characters exhibiting unacceptable social behavior and in terms of their tendency to follow this pattern of behavior in their own social lives. Work toward developing techniques for obtaining this information has been under way since April, 1954, and more definite findings will be reported next year. Following development of techniques for accurately measuring this kind of information, it is planned to develop a larger study that can be applied on a country-wide basis with the prospect of obtaining answers to this general problem that will have scientific validity.

Meeting of Mental Health Representatives of State Medical Associations

Following publication last year of a program of 13 points that were suggested by the Committee on Mental Health as a basic program for mental health activities at state and county levels, a survey of state medical associations indicated a considerable interest and enthusiasm for a meeting of representatives from all states at Association headquarters for the purpose of discussion and coordinated planning. Invitations for this meeting on Sept. 17 and 18, 1954, have been issued to chairmen of committees on mental health of the state medical associations and to other mental health representatives of those associations. The general purpose will be to discuss methods of gaining a more effective integration of techniques of psychiatry with general medical practice and methods by which mental health programs of state medical associations can achieve this objective. It is the hope of the Committee on Mental Health that, following this meeting, every state medical association will have organized an active committee in this field through which it will develop similar activities at county levels.

Subcommittee on Alcoholism

In January, 1954, on recommendation of the Committee on Mental Health, the Board of Trustees authorized the appointment of a subcommittee on alcoholism, as follows: Drs. Marvin A. Block, chairman; Robert Fleming; and Andrew S. Tomb and Selden D. Bacon, Ph.D.

Tentative Program.—Since its appointment on Jan. 1, 1954, the subcommittee has had several meetings and has stated its primary purpose to be that of stimulating the organization of programs on alcoholism through the appropriate committees of state and county medical associations. The subcommittee has tentatively drawn up the following points, which it believes contain the elements of a well-integrated program in the field of alcoholism for national, state, and county medical societies:

1. To promote the establishment of committees on alcoholism in all county medical societies where feasible. County societies or groups of counties may cooperate in appointing such committees, made up of public health physicians, psychiatrists, internists, general practitioners, and industrial physicians.
2. To promote the inclusion of proper teaching on alcoholism and understanding of alcoholics and their treatment in the curriculums of medical schools, law schools, and schools of education, sociology, nursing, and social work, both in graduate and undergraduate colleges throughout the state, and to foster postgraduate education on alcoholism by: (*a*) informing physicians on symptoms, diagnosis, and therapy and (*b*) informing and advising other allied professions through the county medical societies.
3. To cooperate with the Subcommittee on Alcoholism in establishing terminology and definitions in the field of alcoholism and uniformity of such terms.
4. To urge study of ways whereby medical service insurance companies, the Blue Cross and Blue Shield, etc., and private companies within each state can accept and treat alcoholism as a disease, giving full coverage under present policies as is now done for other diseases.
5. To educate hospital authorities in each state to open their hospitals for the inpatient treatment of the alcoholic, especially in the acute stage, and to encourage establishment of outpatient dispensary services for alcoholics at general hospitals, where feasible, for follow-up treatment. Nonmedical workers and nursing home managers who direct institutions where alcoholics are treated should have available to them training courses and the advantage of working under medical supervision.
6. To establish minimal standards of treatment for alcoholics and to encourage study of the illness and its treatment by: (*a*) education among hospital staffs and medical students and through county society programs and (*b*) rehabilitation—the coordination of present treatment processes and promotion of demonstration centers.
7. To stimulate in each state health department or division on alcoholism plans for activity on the public health aspects of the problem, including medical prevention and early detection of alcoholism, and to encourage study of the epidemiology, diagnosis, and treatment of the disease from a public-health point of view.
8. To aid in forming committees within the community to educate the general public on this problem in cooperation with the Community Chest, Council of Social Agencies, health associations, and the National Committee on Alcoholism affiliates, where they exist.
9. To encourage the study of existing legislation and court procedure and encourage modification where necessary.
10. To work cooperatively with nonmedical groups interested in the problem, social workers, Alcoholics Anonymous, the clergy, etc.
11. To develop adequate statistics on alcoholism for each state.
12. The committees should study and make known to members sources for advisory and educational services on this subject in cooperation with the Subcommittee on Alcoholism.
13. To coordinate the activities of the various county medical societies on this problem, when such individual county society committees can be formed. In smaller states, this should be done by the appropriate state association committee.
14. To consult on the proper use of drugs in alcoholism and the proper limitation of sedatives with alcoholics, and to encourage legislation regulating the sale and use of sedatives, disulfiram (Antabuse), and other related drugs.
15. To encourage research in the various physiological and pathological aspects of addiction and alcoholism, including studies of the effects of the newer glandular and related products: cortisone and allied drugs, extracts of thyroid, adrenal, thalamus, and hypothalamus, etc.
16. To encourage the use of the terms "successfully arrested" or "recovered" rather than "cure" in cases of addictive drinking; the criterion for these terms shall be several years of continued abstinence.
17. To provide means for evaluating clinics on alcoholism.
18. To provide for postgraduate professional courses where necessary, with the aid of the subcommittee if requested.
19. To consider the advisability of making alcoholism a reportable disease when criteria shall have been evaluated.

The subcommittee will present this program for discussion at the meeting of the mental health representatives of the state medical associations in September.

HEADQUARTERS

Through its headquarters office, the Committee has continued to work toward effective collaboration with other councils, bureaus, and committees in the aspects of their work that pertain to psychiatry and mental health.

On May 22, 1954, the Committee met with members of the Council on Physical Medicine and Rehabilitation and invited guests representing psychiatry and physiatry in the field of rehabilitation. The general problems discussed were the introduction of psychiatric principles in the field of rehabilitation therapy and proper roles of lay therapists in this work, such as corrective therapists, rehabilitation therapists, manual therapists, and other ancillary, lay personnel.

The Committee has discussed with the secretary of the Council on Industrial Health the problem of developing proper programs of mental health in industry. In order to further the development of such a program, a closer cooperative effort will be necessary between this Council and the Committee on Mental Health, and it is planned to set up a joint subcommittee for this purpose. A list of names of outstanding leaders in industry has been suggested for possible inclusion on this subcommittee.

FUTURE PLANS

The Committee has been negotiating with the central inspection board of the American Psychiatric Association for the past 18 months toward a mutually acceptable agreement whereby the Committee could officially participate with the central inspection board in the work it is now doing concerning inspection of mental hospitals, with the understanding that the Committee would provide additional personnel for this work. Actually, no final, mutually acceptable working relationship has yet been reached, and this matter is still in abeyance. The Council on Medical Education and Hospitals did not find itself in complete approval of the plan that had been made so far, as it felt that the Council also had an interest in all procedures of hospital inspection that emanated from the Association. No formal plans have been made as yet. Representatives of the Committee on Mental Health have been invited to meet and discuss this proposal informally with the executive committee of the American Psychiatric Association.

Report of Council on National Defense

In June, 1954, the Board of Trustees changed the name of the Council, on its request, from the Council on National Emergency Medical Service to the Council on National Defense. The functions and responsibilities, however, were not changed.

During the period covered by this report, Oct. 1, 1953, to Sept. 30, 1954, two members of the Council, Drs. Roscoe L. Sensenich and Harold C. Lueth, were reappointed by the Board of Trustees for another five year term of service.

MILITARY AND SELECTIVE SERVICE ACTIVITIES

For the past several years all have lived in hopes that there would soon be an end, or at least an easing, of the world tensions that have resulted in abnormal military demands on our citizenry in general and medical and allied health personnel in particular. However, the unresolved Korean situation, the unrest in Asia, and the recent conflict in Guatemala have made the prospects of all-out war increasingly imminent. It is apparent that some unusual and long-range planning must be initiated to meet the needs of the armed forces for physicians. While the "Doctor-Draft law" has provided a mechanism for supplying physicians for the military forces for the past several years, other means must be used after July 1, 1955, when the current act expires. It is imperative, in the opinion of the Council, that the Department of Defense make plans now to meet its requirements after next July. With this in mind, the Council has suggested that the Department of Defense work with the Association in an earnest effort to make military service more attractive and to devise ways of obtaining necessary manpower without recourse to a discriminatory draft law. In furtherance of this effort, the Council and the Association, in February, 1954, endorsed the military medical scholarship program submitted by the Department of Defense. This program would provide for the subsidization of a limited number of medical students in return for a period of obligatory military service after graduation. Endorsement of the program was made contingent on the condition that students included must not be approached until after entrance into medical school; they must receive no special consideration; and the number of participants in each medical class must be limited.

"Doctor-Draft" Law.—Following the enactment of Public Law 84, 83rd Congress, on June 29, 1953, it became necessary

for the Department of Defense to promulgate implementing regulations. These regulations, which were issued initially on Oct. 7, 1953, were analyzed immediately by the Council and discussed in THE JOURNAL and in special letters sent by the Council to state medical societies and to the chairmen of state medical advisory committees to the Selective Service System. Three items that are or could be covered by these regulations and that have concerned the Council are:

1. The readjustment of the grades available to reserve officers recalled for a second tour of active duty. The original regulations only allowed credit for professional experience acquired prior to the date of the original commission. Under date of Nov. 23, 1953, the department amended its regulations to allow credit for experience acquired up to the time of "current entry on active duty."

2. The interpretation of the section of Public Law 84 that provides that a physician, under regulations prescribed by the President, shall "be appointed, reappointed, or promoted to such grade or rank as may be commensurate with his professional education, experience, or ability." In its regulations the Department of Defense has not allowed credit for professional experience acquired after entry on active duty. It is the belief of the Council that such an interpretation does not properly reflect the intent of Congress. Attempts are still being made by the Council to effect a change in this part of the regulations.

3. A reduction in the period of service required of physicians with 12 or more months of service during World War II who have been recalled for a second tour of active duty. In its recommendations concerning the bill that became Public Law 84, the Council suggested that the period of service for physicians with 12 months or more of previous active duty be limited to an additional 12 months. This recommended amendment was not included in the bill as enacted. The Council has since recommended to the Department of Defense that this reduced period of service be established administratively. This could be done, since the periods of service stated in the law are all maximum periods.

Medical Care for Dependents of Service Personnel.—During the second session of the 83rd Congress two bills, S.3363 and H.R.9697, were introduced to effectuate the recommendations of the Citizens Advisory Commission on Medical Care of Dependents of Military Personnel. Hearings were not held on these bills prior to the adjournment of Congress. It has been indicated, however, that they will be introduced in substantially the same form early in the 84th Congress. In response to a request from Senator Saltonstall, chairman of the Senate Armed Services Committee, the Council prepared a detailed memorandum including a résumé of the past activities and the present position of the Association concerning dependent medical care. In part the Council outlined the disagreement of the Association with the manner in which the survey of dependent medical care was conducted by the citizens advisory commission and with the final recommendations. The position of the Association in this regard was based on a series of individual analyses of the commission's study that were prepared by the staff as well as the members and consultants to the Council.

Survey of Discharged Medical Personnel.—During the period covered by this report, the Council continued an opinion survey among physicians being released from active military duty. Since this project was initiated a total of 9,860 questionnaires have been sent out and 7,407, or 75.1%, have been filled out and returned. In the period from Aug. 31, 1953, to Sept. 1, 1954, a total of 4,225 questionnaires were sent out; of this number 3,641, or 86.2%, have been filled out and returned. As in the past, the results of the survey have been used as the basis for conferences with representatives of the Department of Defense and the armed forces in an effort further to improve the utilization of physicians in uniform.

Placement Assistance for Physicians Released from Military Service.—In July, 1952, the Council began the practice of writing to each physician being released from active military service to welcome him back to civilian practice and to supply, if desired, information concerning available civilian medical opportunities. This program has been of assistance to physicians leaving the services, as well as to communities and medical institutions in need of medical personnel. In the period from Aug. 31, 1953, to Sept. 1, 1954, letters have been sent to 3,086 individual physicians. Of this number, 548 have requested further information.

Liaison with Physicians on Active Military Duty.—The comments made on the questionnaires distributed by the Council to physicians leaving military service indicate clearly that there is a need for close liaison between the Association and physicians in uniform. In an attempt to satisfy this need, the Council explored the possibility of publishing a newsletter for physicians in service. Security regulations, unavailability of mailing lists, and repeated changes of assignment, among other things, made such a project impracticable. Instead, arrangements have been made for the Council to prepare and publish each month an article entitled "A Message from the A. M. A." in the *United States Armed Forces Medical Journal.* The Council has been permitted, through the generous cooperation of the office of the assistant secretary of defense (health and medical), to publish unedited comments on a wide range of subjects in this column. To date, 10 articles have appeared covering the following subjects:

Introductory message by Dr. McCormick, then President of the Association.
Explanation of the functions and activities of the Council on National Defense.
Explanation of Public Law 84, 83rd Congress.
Recital of position of the American Medical Association relative to the status of priority 2 physicians under the "Doctor-Draft" law.
Analysis of Department of Defense regulations implementing the "Doctor-Draft" law.
Results of survey of physicians leaving military service (parts 1 and 2).
Discussion of efforts of the Council to reduce the period of service required of certain priority 2 physicians.
Position of the Association relative to dependent medical care.
Résumé of legislation with medical implications enacted during the 83rd Congress.

CIVIL DEFENSE ACTIVITIES

It has been frequently stated by official sources that the first test of an atomic weapon or device by the Russians was detected in August, 1949. Four years later, in August, 1953, Premier Molotov announced to the world that "the United States no longer possesses a monopoly of the hydrogen bomb." Thus, our superiority at present is relative and must depend on a quantitative and qualitative lead in the production of thermonuclear or hydrogen types of weapons. This fact and the aforementioned current conflicts demand that we recognize the distinct possibility of total war and take the steps necessary to solve the resulting medical problems. Fortunately, the Commission on Organization of the Executive Branch of the Government is also aware of the seriousness of the situation. Division 4 of the commission's Medical Services Task Force has recently completed and submitted a full report with recommendations. The Council on National Defense has been privileged to work closely with the commission on this survey. On two occasions the Chairman of the Council has been permitted to outline to the commission, in detail, the interest and activities of the Council in this field. It is hoped that the study will result in increases in national emphasis and action in the civil defense field, which are greatly needed.

Survey of State Medical Civil Defense Preparedness.—In conjunction with the Medical Services Task Force of the "Hoover Commission," the Council conducted a national survey to determine the status of medical civil defense preparedness, by states, for both wartime and natural disasters. Questionnaires were sent to the chairmen of the emergency medical service committees of the state medical societies and to state civil defense directors. The results of the survey have been tabulated and sent to all interested persons. They show in chart form detailed information regarding state civil defense legislation, appropriations, staffing conditions, plans for medical and hospital personnel, and training facilities for professional and auxiliary medical personnel and lay volunteers. This survey indicates, in part, that 33 states, Alaska, and the District of Columbia have written medical plans; 29 states, Hawaii, and the District of Columbia have specific disaster assignments for physicians; and 18 states and Hawaii have issued manuals and conducted drills for the purpose of training medical personnel for roles in civil defense activities.

Medical Civil Defense Conference.—On Feb. 23, 1954, a medical civil defense conference was held in Louisville, Ky., sponsored jointly by the Council on National Defense and the Council on Industrial Health of the American Medical Association. Proceedings of the meeting have been prepared by the Council on National Defense and distributed to all in attendance.

Second National Medical Civil Defense Conference.—Sponsored by the Council, the second National Medical Civil Defense Conference, under the chairmanship of Dr. Stafford L. Warren, was held in San Francisco on June 20, 1954. It was a most successful meeting and was attended by 194 physicians and civil defense officials. Copies of the proceedings of the conference have been distributed to all in attendance.

Cooperation with County Medical Societies Civil Defense Organization.—On Nov. 14 and 15, 1953, the Council participated in the fourth of a series of civil defense conferences sponsored by the county medical societies. In response to a request from the officers of this organization, the Board of Trustees has authorized the Council to provide staff and clerical assistance to the group in arranging for future conferences. This assistance is now being given in preparation for the fifth annual conference, which will be held in Chicago on Oct. 30 and 31.

Medical Planning for Civil Defense.—During the year a series of six articles was sponsored by the Council in THE JOURNAL to inform the medical profession on problems connected with civil defense. These articles have been reproduced and distributed in booklet form. About 1,700 copies have been sent to national, state, and local civil defense officials and to physicians interested in medical civil defense affairs. Articles included in Medical Planning for Civil Defense are:

How to Organize for Civil Defense, Charles W. Steele, M.D.
Developing Medical Participation in Civil Defense, Carroll P. Hungate, M.D.
The Physician in Civil Defense Operations, James H. Lade, M.D.
Civil Defense Responsibilities of Physicians, Edgar M. Dunstan, M.D.
The Improvised Hospital, Harold C. Lueth, M.D.
Civil Defense, a Personal Matter for the Physician, Cortez F. Enloe Jr., M.D.

Bibliography of Articles on Medical Aspects of Civil Defense.—During the year the Council prepared and distributed a comprehensive bibliography of pamphlets and articles that have been published dealing with the medical aspects of civil defense. This publication consists of an alphabetical listing of the titles of the articles included and an alphabetical listing of the authors. Supplements to the bibliography will be prepared on an annual basis.

MISCELLANEOUS ACTIVITIES

During the past year the Council has continued to maintain close liaison with federal and state governmental agencies and with allied health organizations. All have been extremely cooperative and helpful to the Council in carrying out its responsibilities.

A periodic Information Memorandum has been distributed to the members and consultants of the Council, advising them of the latest civil defense developments and furnishing them with copies of the most recent civil defense publications. A similar Civil Defense Review is dispatched on a monthly basis to a mailing list of over 800 persons, consisting primarily of the chairmen and members of state emergency medical service committees. In addition the members of the Council and the staff have written numerous articles, reports, and editorials for THE JOURNAL and other health publications.

COUNCIL MEETINGS

Two meetings of the Council were held in Chicago on Oct. 31 and Nov. 1, 1953, and April 10 and 11, 1954. In addition to the Council members and certain officers and staff members of the American Medical Association, representatives of the major national health associations and interested government agencies were in attendance.

APPRECIATION

The Council wishes to express its appreciation for the cooperation and assistance it has received from the Board of Trustees and the officers of the Association and from the allied professional organizations and agencies of the federal government with which it has worked during the period covered by this report.

Report of Council on Rural Health

The Council on Rural Health takes pleasure and great pride in presenting this 10th annual report of its activities. With this report we are concluding the first decade of our work, and it is with gratitude that we express our appreciation to the elected officers of the American Medical Association, the Board of Trustees, the House of Delegates, and the administrative officers, all of whom have contributed much to our work both as to opportunity to serve and facilities with which to operate. We are also grateful to the Advisory Committee composed of representatives of the American Farm Bureau Federation, the Farm Foundation, the National Grange, the Association of Land Grant Colleges and Universities, the farm journals of America, and those members-at-large who have given so generously of their time and counsel in conducting our program through the years. It is with genuine appreciation that this Council wishes to acknowledge the cooperation of the American Farm Bureau Federation with its 1,600,000 farm families, the National Grange with its 950,000 members, the Agricultural Extension Service with its educational staff in each of the 3,100 counties of the nation, and the countless thousands of smaller organizations throughout the United States that have welcomed us into their organizations and have permitted us to work with them in their programs of improving rural health. We count the confidence of the American Medical Association and of the farm population of America as a great trust bestowed on us. We have made every possible effort to reconcile differences of opinion caused by misinformation that might have existed in the beginning of our work and to bring about full understanding of the mutual interests of the different organizations and practicing physicians. We pledge to all groups our continued devoted and undivided attention to matters that concern us in our field of providing better medical care and better health information to the persons in rural areas of this country.

Since this report comes at the end of our first decade, it might be well to mention briefly the situation as it existed in 1945, when the American Medical Association first designated the Committee on Rural Health to explore possibilities in the rural field. The war was just ending. All civilian activities had suffered change and dislocation, and this was especially true in health and medical care. About 60,000 physicians had entered the armed services, in many instances leaving communities without a physician or with an aging one, and it was natural that the small towns that served rural communities and the rural communities themselves had suffered most by this dislocation in medical care. One further fact existed at the time. Through various devices and the philosophy of the New Deal, attempts had been made to invade the rural field with various plans for governmental medical care. Most rural persons objected to the government being in the field, but, since there seemed little interest elsewhere to remedy this situation or to provide information as to what had really happened, farm communities had become somewhat desperate. It was at that juncture that, through the efforts of the American Farm Bureau Federation, particularly its Administrative Director for the Associated Women, and on the plea of the present chairman of this Council, the Board of Trustees responded to their request and gave us responsibility as a committee to do the exploratory work.

Our early efforts at bringing together the leaders of large rural groups from the various states presented a number of difficulties, and it took some years and considerable effort to establish confidence in each other and a base of understanding. Many persons were using the same terms to discuss different things. We are convinced that, once given the proper information, rural persons are as safe as or a safer segment of our society than any other group, and it was through the National Conferences on Rural Health that we brought together the leaders of these powerful organizations on an equal basis with the physicians represented in this Council and others who attended our conferences. We discussed frankly and freely with them the problems of the day and gradually brought about the harmony, understanding, and support that we enjoy today. Therefore, we repeat that it is gratifying at the end of these 10 years to report to you as a council that more than 5,000,000 of America's farm families, represented one way or another in our efforts, give us splendid cooperation and we, in turn, give them our utmost in the way of service and education.

Here we wish to acknowledge another great group in this endeavor. Those are the physicians who serve on rural health committees and in their own home communities throughout the United States. There are thousands of physicians who have accepted the responsibility for working as citizens with farm organizations of many different types. These men have rendered yeoman service as citizens of the country and as physicians practicing medicine in the open country and small towns of America. Thousands of physicians are joining with their colleagues in rural areas as citizens and maintaining their rightful position of respect and esteem in the hearts of America's rural people.

In 1951 the further honor and responsibility was bestowed on us of elevation from a committee to the status of a council. We were also authorized to employ a field director. These advances made it possible for us to go into the states and communities of this country and talk with leaders from all walks of rural life—the ministers, the teachers, the farmers themselves, the farm homemakers, the farm organization leaders, and physicians—bringing together groups at the local community basis. We are now getting a wider acceptance of the differentiation between medical care, which is a service rendered by the physician at the time of illness, and health, which is a personal and a community responsibility. We have received general acceptance of the idea that there is nothing wrong in America with government, education, or health that cannot be corrected in the community in which the problem exists with the resources within or available to that community. We feel that these two things have enabled us to talk frankly and freely to what might otherwise be critical groups and to win with them a foothold in what we have experienced as a wonderful adventure in understanding. Out of this understanding has come this support that we take such pride in presenting to you.

In the Northeastern region of the United States, composed of the states of Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, Delaware, New York, New Jersey, and Pennsylvania and served by Dr. Norman H. Gardner of East Hampton, Conn., there has never been a great problem of placement of physicians or construction of hospitals, because the country is industrial and thickly settled for the most part. There have been, however, a few areas in which it was necessary to supply physicians, and organized programs have been carried on in those rural communities. Maine is a state in which the physician supply in rural areas is not good even yet, and in Pennsylvania there is a need for more physicians to serve small towns and rural communities. But in both of these states the committees on rural health are at work at the job. For example, the medical school located at the University of Vermont in Burlington is now making an effort to work out an arrangement with Maine and New Hampshire for an educational compact to support the school to produce more doctors, who would agree to practice in the states from which they come. The arrangement would be something like that worked out at the University of Colorado with the states of Wyoming, Montana, and New Mexico.

There have been a number of small communities where Hill-Burton hospitals have been built, and every effort is made to see that their standards are kept up. There is a persistent interest in supplying physicians to areas without adequate medical coverage in all states of this region. Since it is felt desirable to keep physicians apprised of recent advances in medicine, speakers of interest to them are usually brought to state and county meetings for this purpose.

In New Jersey the work has been carried out mostly by the Woman's Auxiliary with the active help and cooperation of the state medical society. Rural health conferences are held each year, as well as many local meetings throughout the state that are aimed at bringing a message of better health to smaller groups. New Jersey has been quite active in the rural health field.

In Pennsylvania there is a very active rural health committee that has recently been enlarged to be more representative of the state. It feels quite concerned about the need for physicians and, in some areas, feels it is one of the most important activities. It is also concerned with the lack of interns in smaller hospitals and is doing all it can to alleviate this shortage. The committee feels it should, assist the Middle Paxton-Straws Consolidated Parent Teacher Association in conducting a survey to ascertain the true health picture in its community.

Connecticut has continued to carry out its exhibits at small rural fairs with some success. The Woman's Auxiliary of the state medical society manned the booths and passed out much literature designed to help rural persons help themselves to health. The committee is now deliberating whether or not to carry out a survey designed to show the dislocation of medical facilities through the migration of urban persons to the country. The medical auxiliary in Pennsylvania has also worked out a program with the extension service of Pennsylvania State University in which the message of better medical care and health is being taken to multiplied thousands of rural women.

In New Hampshire the Farm Bureau, through Mrs. Dorothy Nedeau, seems to be the deciding factor, and eventually the state medical society and the Farm Bureau will work out a genuine program.

The Middle Atlantic states, composed of Maryland, Virginia, West Virginia, North Carolina, Tennessee, Kentucky, and South Carolina and served by Dr. George Bond, presently on duty with the Navy, have also made good progress. North Carolina has held its sixth annual conference on rural health, and West Virginia is holding its seventh this year. The Virginia Council on Health and Medical Care continues very active, particularly in the field of physician placement. It has many other activities. Tennessee is planning its first rural health conference for 1955 and is carrying on an extensive medical-society-supported program for the improvement of medical care and hospital facilities in four "target" areas in the state. Maryland is making its second effort to get together on a program of health education and better understanding of the groups working in the state. Kentucky has had its third annual conference on rural health and is planning the fourth. The state has an unusually fine medical education scholarship program designed to place young men in rural areas of that state. This region is still making tremendous strides in understanding, health education, and physician relationships with rural groups.

In the Southeastern region, comprising Florida, Georgia, Alabama, Mississippi, Louisiana, and Arkansas and served by Dr. Charles R. Henry, Little Rock, Ark., excellent progress continues. The regional director in this area called a meeting in Birmingham, Ala., in January, 1954, for medical society presidents, rural health committeemen, and public relations representatives. In attendance were men from Florida, Georgia, Mississippi, and Arkansas. Sudden illness prevented Dr. Sanders of Louisiana from attending. The philosophy of the Council was discussed. Material available from the Council office was exhibited and explained. A general discussion of the rural health problem in each state completed the meeting. Those present expressed genuine satisfaction in the conference. It was felt that the American Medical Association had come closer to these states and was showing a live interest in state problems. We are proud to report that Florida and Mississippi have made considerable progress in the development of their rural health programs.

The Florida Medical Association, through its rural health committee, public relations department, is experimenting in two widely separated areas of the state with the rural health problems. It has an excellent liaison with the agricultural extension service of the Florida State University. By virtue of this arrangement, the Florida Medical Association will send this year a boy and a girl to the National 4-H Club Congress in Chicago. One hundred eighty-three Florida agricultural extension agents are participating in this activity. Copies of the Florida rural health program were distributed to 450 farmers' wives at the State Senior Council of Home Demonstration Workers held the week of July 12, 1954. The Florida Medical Association has consulted with the Field Director in developing its program. It is gratifying to see so much accomplished in such a short time.

The Louisiana State Medical Society operates its rural program through the Louisiana Health Council. Dr. M. C. Wiginton of Hammond is president of this organization. The yearly meeting is held in November. Dr. J. P. Sanders of Shreveport is chairman of the Committee on Rural and Urban Health of the Louisiana State Medical Society.

We have witnessed little activity in rural health movements through the medical societies in Georgia or Alabama. However, a survey is now being made in Alabama of existing health facilities in rural areas. We are hoping that we can stimulate further action in these two states.

The first Mississippi Rural Health Conference was held in State College on July 14, 1954. The attendance was small, less than 100, but there was considerable discussion by audience and speakers. Dr. S. K. Johnson of Pelahatchie, chairman of the Committee on Rural Health of the Mississippi State Medical Association, was encouraged and pleased with the cooperation and enthusiasm of Dr. C. H. McCall, president of the state association. Dr. McCall made the keynote address, "Your State Medical Association and Rural Health." This address was given favorable comment by the local newspapers that have wide circulation. Mrs. Annette Boutwell, who had worked with the Mississippi State Medical Association as the director of this conference, has taken a position with the Medical Society of the State of North Carolina to work with its rural health program. Dr. Johnson feels that this initial conference benefited all in attendance, and he looks for a larger conference next year.

The fourth Arkansas Rural Health Conference was held in Little Rock in July, 1954. Although attendance was less this year, there were 463 present, with 71 of the 75 counties represented. The meeting was expertly guided by Dr. Ben Saltzman of Mountain Home, chairman of the Rural Health Committee of the Arkansas Medical Society. The program was well balanced and afforded adequate time for audience participation. The discussions were lively. There was adequate newspaper coverage. The opening session was televised, and three 15-minute radio programs were broadcast. Observers from Tennessee and Missouri were in attendance. In order to maintain interest in this movement in Arkansas, the Advisory Committee met in August to discuss the advisability of sectional meetings for the coming year. It is believed these will reach more community leaders.

The North Central states, comprising the states of Illinois, Indiana, Michigan, Missouri, and Ohio and served by Dr. Carll S. Mundy, Toledo, Ohio, have made considerable progress on [illegible] to better rural health during the past year. All have [illegible] physician placement programs in operation during [illegible] of them have been active for several years. As [illegible] areas in this region that are *without* a physician are [illegible] fewer in number. Some areas feel that additional physicians might be desirable, but even these are becoming [illegible]. All states report difficulty in evaluating need as compared with desire for a physician. However, the physician placement programs are well on the way toward solving the problem of medical service in rural areas.

Two of the states have had medical scholarship programs in operation for six and seven years, respectively. As a result, medical students are just now beginning to finish their internship and residency training periods. This is a program that has attracted considerable interest. Its value cannot be measured for another several years. Other programs designed to attract medical students to rural areas are being implemented or projected in all of these states. While they vary in detail, their objectives are identical. For the most part, they have taken the form of entertainment for senior students and interns and their wives during which the advantages of rural practice are delineated. Special training programs for rural practitioners are now in effect in Ohio and Illinois and are projected in Indiana, Michigan, and Missouri. All these programs have definite potentials, but several years must pass before their real value can be estimated.

State rural health conferences are being held annually in Illinois, Michigan, Missouri, and Ohio. Ohio is holding eight district conferences annually in addition to its state conference. In all the states progress is being made toward a better understanding of rural health problems by all groups concerned and has resulted in closer cooperation between these groups in efforts to solve those problems.

Perhaps the most noteworthy development of the past year in this region was the recognition by Michigan of the special type of problems that follows the industrialization of rural areas. Their 1954 conference was devoted to that subject. The director for this region attended that conference and was much impressed not only by the program and its subject but also by the importance of that trend to other states. It seems especially important for the states in which there are both wide rural areas and large industrial centers to be aware of the problems brought about by the migration of rural persons to industrial centers. This is a trend that has existed during the past decade or longer. Even more important is it for the county societies in these states to recognize the possible effects of a period of unemployment with a resultant reversal in that trend.

The Southwestern region, comprising the states of Kansas, Oklahoma, and Texas and served by Dr. Allen T. Stewart, has made considerable progress this year. Progress in this area has been along the line of physician distribution effort and orientation of medical students. Two states now have preceptorship programs whereby medical students live and work with general practitioners for a portion of their senior year, learning at first hand by doing actual practice of medicine. This program in Kansas was the subject of a feature story in *Reader's Digest*, while the July issue (International) of *Life* magazine carried the story of a similar program instituted last year in Texas.

In physician distribution, efforts have been made through placement bureaus fostered by the state medical association to bring the physician and the needy community in contact. To arrive at an intelligent solution of the actual need for physicians, the Texas Medical Association has set out to survey each councilor district and ascertain the need for physicians by writing to community leaders, chambers of commerce, and mayors for reports on the situation in their local areas. Studies of population trends, location of trade centers, and building of new industrial plants or government installations have also been made. One councilor district has already been used as a pilot study, and, from the replies received, no actual shortage of physicians was found. Through efforts of a field secretary specifically appointed at the request of the state committee on physician distribution, this work will now be accelerated, and when all the data are in, the placement bureau of the state association will concentrate on the areas most in need of physicians.

The special students' day program has received enthusiastic response. An entire day is taken at the medical school, and the senior class is presented a program in which problems of location, office maintenance, employment of satisfactory help, financial matters, items of business law, and medicolegal matters are discussed by experts. On such programs the advantages of practice in smaller towns and rural areas can be outlined. Such a program plus the efforts of committees on physician distribution and preceptorships are answering many of the needs of rural areas.

The states of North Dakota, South Dakota, Minnesota, Wisconsin, Iowa, and Nebraska comprise the region served by Dr. Willard A. Wright, Williston, N. D. In the years immediately following the end of World War II, activities in this area, as in the rest of the nation, were primarily concerned with remedying deficiencies in physical plant and personnel in the medical care and health field. An immense amount of time, effort, and money has been put forth by communities, governmental agencies, and physicians to improve this situation. While the mere fact of improving the quantity and quality of physical facilities and trained medical persons in rural areas has been very beneficial, a sort of unearned increment has resulted because of the mutual education of both groups. In this area, experience shows that in places where the public acted without or against professional advice friction developed and benefits were minimal or, in some instances, totally absent. In the same way, complete professional control reduced the over-all good in any program. As a direct result of all these activities, medical persons have profited from joining with their neighbors in providing civic improvements, and many lay persons have come to a fuller understanding of the responsibilities of the individual and the group in maintaining good health and providing for proper medical care.

Now that the supply of physical facilities and medical personnel is more nearly adequate in this area, increasing thought is being given to the matter of proper usage of such facilities. As might be expected, a vast number of difficulties have arisen in the use of the medical care and health facilities provided. This is quite understandable, and it is felt that proper effort in the direction of improved education of both professional persons and the communities in general will result in improvement in the use of such facilities. Currently, a great deal of the efforts of medical societies and rural health committees is being directed toward this end. A number of experimental programs have been put in operation, notably several programs in Minnesota: (1) the provision of seminars for training and education of technical personnel attached to hospitals and small clinics and (2) the program of the Minnesota State Medical Association, in which every physician's office has been designated a cancer detection center and a standard type of physical examination has been agreed on by physicians offering this service.

In Nebraska there is an active program to bring postgraduate medical education to the physicians in their communities. This is in its early stages and is patterned somewhat after the presently operating program in Minnesota.

Our efforts in the next few years should be directed toward an educational program that will result in improved usage of medical and health facilities now available, with necessary improvements in physical plant and provision of personnel rather than in the field of providing large numbers of new physical facilities. In this connection it might be well to point out that it is hard to differentiate between the work of rural health committees as such and the work of their state associations as a whole. In general, it is a combined effort on the part of the whole organization rather than merely one or two committees. The Council recognizes the desirability of furthering relations with the established public health agencies and with the innumerable voluntary agencies working in the field of special diseases.

In the Rocky Mountain region, extending from Canada to Mexico and composed of the states of New Mexico, Colorado, Utah, Montana, and Wyoming, served by Dr. Fred A. Humphrey, Fort Collins, Colo., increased interest taken by rural health committees and by various state medical societies as well as by lay organizations has been quite evident during the past year. There has been a gradual growth of this interest through the past decade, but areas are great and population in some of the states in this region is small. The spirit of the people in working together has been good on the whole and has been improving all the time. The Great Plains Agricultural Council, which covers most of the states in this region, has had a subcommittee on health, and the regional director has served as an advisor to this group. They have made extensive surveys bringing out certain interesting facts, but the agreement to work together on improving problems that exist has been of far more value than the information brought out in the surveys. In some cases it was revealed that the situation in these states was far better than had previously been thought. Therefore, the survey has rendered a good service for the region as a whole. A regional rural health conference was held in Denver Nov. 11 and 12, 1953, for these states, to which other states outside the region were invited. We did not have an unusually large attendance, but there was a representative group from all the states in the region with the exception of New Mexico. Probably a great deal of the increased interest shown this year can be attributed to this conference. The chairmen of the committees in Wyoming, Dr. Andrew Bunten, and in Utah, Dr. Reed Farnsworth, have reported this meeting to their state medical societies; other organizations have reported it, and some of the conclusions have already been put into practice.

The rural health committee of Montana is now writing a series of articles for a farm magazine and rural newspapers that is similar to those that have been prepared for a number of years for the Colorado papers by the Colorado State Medical Society.

The Utah Rural Health Committee is active in many programs and plans to bring together later this year, in a more concrete and better organized fashion, many of the organizations interested in rural health. The Colorado society has produced a film showing the activities of a group of high school girls known as "The Jugs" and has carried on an excellent program throughout the year. It also has been active in establishing county health councils that, in turn, have become active in health programs, including sewage disposal in small rural communities.

In the Northwestern states, composed of Washington, Oregon, and Idaho and served by Dr. W. J. Weese of Ontario, Ore., the program is advancing in a very splendid way. Washington held its second state rural health conference in Yakima in March, 1954, with more than 250 persons in attendance. A well-balanced program was presented at this conference, and all the known organizations interested in rural health were present and participated. The regional director has made contacts with Mr. Ralph Neill, executive secretary of the Washington State Medical Association; Dr. L. C. Miller, chairman of the Committee on Rural Health; and Mr. A. A. Smick of the Washington State Extension Service and with others, giving them advice and suggestions throughout the year. There is an excellent voluntary health insurance educational program carried on in the state, also an excellent physician placement program, as well as a general program of understanding in how to get better medical care and health facilities in the state.

Oregon has held four state conferences on rural health and is planning its fifth for December of this year. Its committee on rural health also has an excellent physician placement program, and all the organizations and agencies in the state are now working in harmony, with one possible exception, that being largely due to one personality. This is a state that not many years ago was having some conflicts between its health and educational agencies, and these are now almost entirely absent.

In Idaho the program is beginning to develop. There is only a skeleton public health department, and much work is needed in this state. The regional director has made several contacts, and the state medical association has helped with the construction of two new hospitals, given advice to rural groups on many matters, and placed 48 physicians in the state during the past year.

In the Western region, comprising California, Arizona, and Nevada and served by Dr. J. Frank Doughty of Tracy, Calif., there is the widest diversity of problems and conditions of any area of the country. The great increase in population in the Pacific states continues to require more attention to health in rural areas where new settlers take root. The placement service of the California Medical Association has successfully aided in securing physicians for communities in demonstrated need. This has been accomplished with the cooperation of the Rural Health Committee of the Academy of General Practice. The

California Rural Health Council, composed of representatives of the farm organizations, the P. T. A., State Health Department, Agricultural Extension Service, and the California Medical Association, serves to promote and coordinate the rural health activities of the various organizations. Migrant agricultural workers have been benefited by the improvements in housing, sanitation, immunization, and education in nutrition initiated by organizations composing the California Rural Health Council. Several members of this council attended the ninth Rural Health Conference in Dallas.

A radio broadcast on rural health was made on a farm hour during the American Medical Association's Annual Meeting in San Francisco.

Nevada is making an effort to meet the needs for medical care in isolated communities. Arizona so far has no program.

Prepaid medical care plans of the Grange and California Farm Bureau Federation are well supported. California Physicians Service, Blue Cross, and insurance company plans are rendering extensive service. Most Mexican nationals are covered by an insurance plan, and vaccination against smallpox is compulsory, on entry, for all Mexican nationals but not for residents of California.

The general interest in health and the work of the organizations that have health programs are producing results in better rural health.

The Field Director has visited 41 states during the past year in one capacity or another. Most of his visits have been for the purpose of contacting the physicians, various types of organizations, and leaders and, in many instances, that of bringing these persons together for a discussion of mutual interests in the field of rural health and medical care. Some of the contacts have been for the purpose of addressing some organization or participating in some activity in a particular field of work. In most states the rural health committees have been designated as the committees of the state medical societies to follow through on the physician placement program. Iowa, Texas, California, and others are illustrations, and here we bring together the services of at least two councils of the American Medical Association to assist these committees. The Field Director has assisted in the planning of rural health conferences, discussions on how farm organizations can better develop health education programs, and consultations with state land grant colleges on aspects of their programs and has served in a general, over-all liaison capacity with all these groups for the American Medical Association.

One of the interesting developments of the past year has been the intensified programs of educational materials designed to get rural people better to understand physicians and what constitutes good medical practice. Miss Gertrude Humphreys, a member of the Advisory Committee of the Council on Rural Health, who is also state leader of home demonstration work in West Virginia, prepared a pamphlet entitled "Your Doctor, Your Community and You."

The Rural Health Committee and the Public Relations Department of the Florida Medical Association, working with the Agricultural Extension Service, have developed a rather intensive program of health surveys and health educational activities, the main feature of which is to invite physicians to appear before the organized groups served by the extension service.

The Council has held three meetings of particular interest during the past year designed to get better understanding with the national farm organizations and educational institutions. The first was a dinner meeting with the Board of Directors and the elected officers of the American Farm Bureau Federation in Chicago. The second was a dinner meeting with the executive committee of the Land Grant College Association and its Committee on Extension Organization and Policy in Columbus, Ohio, last November. The third was a meeting with the executive committee and elected officers of the National Grange in Washington in April. We believe that these three meetings have been one of the most significant developments in our program of the past nine years, in that they achieved a great deal in bringing about better working relationships not only with our council but also with the entire American Medical Association.

We have studied the resolutions of most of the state farm bureaus during the past year, and we did not find a single adverse criticism of the American Medical Association in those resolutions we were able to obtain. Likewise, the American Farm Bureau Federation passed a resolution that promotes the philosophy of the American Medical Association insofar as medical care, medical education, and rural health is concerned and continues to condemn any form of compulsory health insurance. A few years ago there would have been a few of the farm bureaus that would have been critical of the American Medical Association policy, but this has now completely disappeared. These resolutions reflect the voice of organized farm bureaus throughout the country. The National Grange invited the Field Director, for the first time, to attend its national meeting and confer with its committees on rural health while they were in session. Their resolution is excellent this year. The National Milk Producers Federation again passed a strong resolution favoring the philosophy and program of the American Medical Association and condemning compulsory health insurance.

The Council's 1954 National Conference on Rural Health, held in Dallas in March, was well attended and enthusiastically supported.

The Council's office continues to maintain a close working relationship with all state medical societies and state rural health committees or committees handling rural health activities, as well as the national agricultural organizations. These contacts include attendance at national meetings of the farm organizations, state rural health meetings, and special assignments designated by the chairman and Council members. Personal contacts are also maintained with leaders of women's organizations and assistance and suggestions given regarding program planning, speakers, and any other assistance available.

In order to publicize our annual conference and supply advance information on the ninth National Conference on Rural Health, which was held in Dallas, Texas, March 4 to 6, 2,000 copies of a preconference flier were prepared and distributed to both lay and professional leaders. This was then followed up with about 4,000 personalized invitations, with each of which was enclosed a completed program giving full information on this annual meeting. Much thought and planning is put into this program, because it is used extensively throughout the year by state planning groups and other organizations in patterning rural health programs to their individual needs. After the conference a digest of the meeting was prepared, and about 3,500 copies of this digest have been distributed from the Council office.

Two executive meetings of the Council were held during the fiscal year, one Advisory-Council meeting, and three full Council meetings. On instructions from the Executive Committee, a trip was made to Portland, Ore., to look over facilities in connection with holding the 1956 National Conference in that city. These facilities were found to be satisfactory; Portland has been selected as the site for the 1956 meeting, and the dates of March 8 to 10 have been definitely set.

About 22,246 pieces of material were sent out from the Council office during the year, including five issues of the *Parade of Progress* newsletter. The *Parade of Progress* is our rural health newsletter, started in 1953 as a result of many requests of physicians and lay leaders for a medium of exchange for ideas and information between communities and states. We have watched with interest the reaction of our readers to this information channel. It augments the National Conference on Rural Health, the contacts of the Field Director, and our other services to leaders. We still do not maintain a regular schedule of publication and issue it only when there is sufficient worthwhile material to justify release. Readers have been highly complimentary of the services of the newsletter. We see programs being set up in other states as a result of the ideas or suggestions published, and we receive requests for more information on some points highlighted in the letter.

(To be concluded)

THE JOURNAL
OF THE AMERICAN MEDICAL ASSOCIATION
535 N. DEARBORN ST. . . . . CHICAGO 10, ILL.
Editor . . . . AUSTIN SMITH, M.D.
Associate Editor . . . . JOHNSON F. HAMMOND, M.D.
Editor for Medical Literature Abstracts . GEORGE HALPERIN, M.D.
Assistant Editor . . . . WAYNE G. BRANDSTADT, M.D.

Subscription price . . *Fifteen dollars per annum in advance*
Cable Address . . . . "Medic, Chicago"

PEPTIC ESOPHAGITIS

Chevalier Jackson[1] predicted in 1929 that "When the time shall have come when every patient with the slightest discomfort or abnormality in swallowing, every patient with regurgitation, 'heart burn' or 'water brash' is examined esophagoscopically, peptic ulcer of the esophagus will be found less rare than it is now thought to be, though it is probably not a common disease." Detection of esophagitis by esophagoscopy, however, has come into its own only recently as the result of the adoption by internists of gastroscopy as a simple and safe method.

Winkelstein[2] reported in 1935 on a group of patients with unusual and distinctive esophageal symptoms. The symptoms were those of substernal pain, heartburn, sour regurgitations, and hyperchlorhydria, symptoms that recall the clinical picture of peptic ulcer of the esophagus as described by Jackson and by Friedenwald. Esophagoscopy in Winkelstein's cases revealed a diffused inflammation of the esophagus without a definite ulcer. The relief obtained by antacid and ulcer therapy was quite definite and impressive. Winkelstein concluded that the disease in these cases is peptic esophagitis resulting from the irritant action on the mucosa of the esophagus of free hydrochloric acid and pepsin.

A review of literature on the causes of esophagitis convinced Butt and Vinson[3] that regurgitation of gastric contents into the esophagus is a normal process. The mucous coat of the esophagus protects it against the corrosive action of gastric contents. It is only when for some reason an inadequate amount of mucus or an erosion is present that the regurgitated juices play an important part in the production of esophagitis. Esophagitis commonly accompanies diseases in which there are frequent attacks of vomiting.

Benedict and Sweet[4] reported in 1948 on 60 cases of benign stricture of the esophagus observed at the Mayo Clinic. In all of these patients the stricture was associated with esophagitis. There were 18 patients with esophagitis alone, 34 with hiatus hernia, 20 with duodenal ulcer, and 16 with esophageal ulcers. Regurgitation of acid gastric secretions, they felt, probably plays an important causative role in esophagitis and benign stricture. Bouginage combined with dietary treatment has given satisfactory results in over two-thirds of the cases.

Hoover[5] reviewed case histories of 72 patients with esophagitis treated at the Lahey Clinic. The basic factor in the production of peptic esophagitis, peptic ulcer, or ulceration was not understood. Vomiting and increase in abdominal pressure may be factors in producing esophagitis. The normal esophageal mucosa is protected from the active acid gastric juices by constant tonic closure at the esophagogastric junction. A peptic esophageal ulceration appears only when there is impairment of the sphincteric action that permits regurgitation of the gastric juices into the esophagus. About 60% of his patients with disabling esophagitis also had a hernia through the diaphragm, most commonly at the esophageal hiatus and associated with a short esophagus. The symptoms of esophagitis are substernal pain and heartburn or dyspepsia made worse by lying down, stooping, or bending. Dysphagia has been an almost common symptom in the severe cases. Bleeding of a minor degree is common, and continued bleeding may lead to severe anemia and disability. An alarming massive hemorrhage or repeated hemorrhage was a presenting symptom in eight cases. Perforation and rupture of the esophagus occurred in three patients, but this appears to be a very rare complication. Treatment consists of a diet much like that used in the treatment of gastric or duodenal ulcer. Antispasmodics and drugs that decrease the vagus activity may be helpful. Patients are instructed to sleep with shoulders elevated. Dilation to prevent stricture formation is an important procedure in the treatment of esophagitis. Intractable cases require surgical treatment. Esophageal perforation or rupture and uncontrolled hemorrhage constitute surgical emergencies. The repair of diaphragmatic hernia in selected cases may be beneficial. Esophagogastrostomy after resection of the strictured area has been used more than other procedures.

Hoover[5] is of the opinion that peptic esophagitis is a relatively common condition. Most strictures can be controlled in a very satisfactory manner by appropriate dilation. Allison[6] reported on 204 patients with diaphragmatic hiatus hernia. He pointed out the significance of paraesophageal hiatus hernia in the occurrence of reflux esophagitis. Beaconsfield[7] stresses that esophagitis does not necessarily occur in all persons with faulty cardiac sphincter or high acidity. There must be an additional factor that produces ulceration of the esophageal mucosa with the same degree of peptic activity. He believes that the commonest cause of slack cardiac sphincter is the presence of a hiatus hernia. Characteristic of the condition is low retrosternal pain and heartburn, which may occur at any time but most commonly after meals, and which is always aggravated by stooping or lying down. This position facilitates the flow of gastric juices into the esophagus in the presence of an incompetent sphincter.

---

[1] Jackson, C.: Peptic Ulcer of the Esophagus, J. A. M. A. **92**: 369-372 (Feb. 2) 1929.

[2] Winkelstein, A.: Peptic Esophagitis: New Clinical Entity, J. A. M.A. **104**: 906-909 (March 16) 1935.

[3] Butt, H. R., and Vinson, P. P.: Esophagitis: I. Anatomy and Physiology and a Review of the Literature, Arch Otolaryng. **23**: 391-413 (April) 1936.

[4] Benedict, E. B., and Sweet, R. H.: Benign Stricture of the Esophagus with Special Reference to Esophagitis, Hiatus Hernia, Esophageal Ulcer, and Duodenal Ulcer, Gastroenterology **11**: 618-628 (Nov.) 1948.

[5] Hoover, W. B.: Esophagitis: A Clinical Evaluation, Ann. Otol. Rhin. & Laryng. **61**: 1148-1158 (Dec.) 1952.

[6] Allison, P. R.: Reflux Esophagitis, Sliding Hiatal Hernia, and the Anatomy of Repair, Surg., Gynec. & Obst. **92**: 419-431 (April) 1951.

[7] Beaconsfield, P.: Reflux Esophagitis: Its Diagnosis and Treatment, Gastroenterology **24**: 369-377 (July) 1953.

Carver[8] reported on 131 patients with peptic esophagitis, most of whom had a sliding hiatus hernia. Winkelstein[9] stresses the frequent association of peptic esophagitis with duodenal ulcer. Of his 20 patients with peptic esophagitis, 15 also had a duodenal ulcer and 2 had a gastric ulcer. Surgical therapy was not as successful as medical therapy with dilation. Palmer[10] analyzes 100 cases of peptic esophagitis seen on the gastroenterology service of the Walter Reed Hospital. He stresses that the cause of esophagitis is not clear but that acid pepsin activity of reflux gastric contents is important. There was a hiatus hernia in 24 of his patients. Seven patients had an active duodenal ulcer, four had an inactive duodenal ulcer, and three patients had an active gastric ulcer. No free hydrochloric acid could be elicited in 11 patients; the others showed secretory ranges within normal limits. The endoscopic picture presented three features: hyperemia, erosions, and exudates. The lesions were patchy in distribution, but the segment close to the stomach was always involved. The circumstantial clinical evidence, as Palmer[10] sees it, points to acid peptic corrosion secondary to cardial reflux as the cause of the disease. Palmer concludes that esophagitis is a disease of considerable frequency. He feels, however, that facts do not permit of an unreserved acceptance of acid peptic corrosion as the cause.

TREATMENT OF SYPHILIS

A new symposium issued by the World Health Organization[1] contains detailed information on the treatment of syphilis, which has been revolutionized by the introduction of penicillin. Whereas chemotherapy with metals required the use of subcurative doses over a long period of time, penicillin cures manifest syphilis and aborts it in the incubation period. Side-reactions to penicillin occur in about 3% of the patients so treated but are rarely severe enough to require discontinuance of treatment and are not as common or severe as those observed in patients treated with metals. Although treponemas may develop a resistance to the metals used in therapy, no penicillin-resistant treponemas have been reported. Because less time and fewer injections of penicillin than of metal are required, a larger proportion of penicillin-treated patients complete the recommended course of treatment. Shafer and his co-workers[1] found that combined treatment with penicillin and metals gave no better results than treatment with penicillin alone but that the results of treatment with penicillin were much better than those with metals alone.

Various repository or long-acting preparations have been tried because they require fewer injections. To be acceptable, such a preparation must be resorbed from the intramuscular depot and excreted through the kidneys at a reasonably constant rate. One of the best of such preparations is procaine penicillin G with 2% aluminum monostearate (PAM), but this may be replaced by benzathine penicillin G (Bicillin), which has not yet been used as extensively but which has the advantage that it contains no oil or aluminum and that 2,500,000 units appear to be as effective as 4,800,000 units of procaine penicillin with aluminum monostearate. Dermatitis medicamentosa, edema, and urticaria occurred in less than 1% of the patients treated with benzathine penicillin by Shafer and Smith,[1] and less than 0.3% had significant reactions. There were no deaths.

Blood levels of 0.03 unit per milliliter of serum have been recommended, although much lower levels have been effective in some patients. Idsoe and his co-workers[1] cite experimental proof that the reinfection rate is higher in patients given large initial doses of penicillin than in those given smaller doses or metals alone. A diagnosis of reinfection rather than relapse is favored when (1) the patient has had adequate treatment early in the course of his infection, (2) clinical symptoms appear before a rise in the reagin titer can be demonstrated serologically, and (3) the patient has had recent contact with an infected source. Another course of treatment is recommended if a patient shows clinical symptoms of relapse or reinfection or if a rise in serologic titer occurs at any time during treatment. Seroresistance after treatment is relatively uncommon; about 95% of patients with seronegative primary syphilis remain seronegative, and 75 to 80% of those with secondary syphilis also become and remain seronegative. Seroresistance after the treatment of late syphilis is, however, common and is not incompatible with cure. Persistent seronegativity over a period of two to five years in a patient with treated late syphilis is considered strongly indicative of cure.

Whether the treatment of early syphilis prevents the late manifestations and in pregnant women prevents the transmission of syphilis to the fetus cannot be determined until penicillin has been used in the treatment of this disease for at least 30 years. If the spinal fluid is negative for evidence of syphilis four years after the initial infection, there is little chance that neurosyphilis will develop. Some observers believe that this is true if the spinal fluid is negative two years after the initial infection. If, however, in a patient who has had inadequate treatment late syphilis occurs, penicillin should be given preferably as soon as a diagnosis is made. In patients with neurosyphilis, clinical improvement is of less prognostic significance than improvement in the spinal fluid findings. For congenital syphilis it is recommended that a baby born with clinical signs of infection be given treatment regardless of the serologic findings.

It may be concluded that penicillin alone is effective and nontoxic and may be given to ambulatory patients at a relatively low cost. Adequate doses will cure both early and late syphilis in most patients, but the clinical and serologic results of treatment depend on the size of the original inoculum, the number of treponemas in the host at a given time, and the duration of the infection. Despite recent advances in the treatment of this disease it is still potentially dangerous, and prevention remains the treatment of choice.

---

[8] Carver, G. M., Jr., and Sealy, W. C.: Peptic Esophagitis, A. M. A. Arch. Surg. **68**: 286-295 (March) 1954.

[9] Winkelstein, A.; Wolf, B. S.; Som, M. L., and Marshak, R. H.: Peptic Esophagitis with Duodenal or Gastric Ulcer, J. A. M. A. **154**: 885-889 (March 13) 1954.

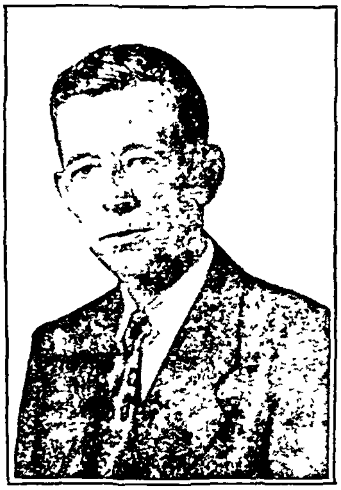
[10] Palmer, E. D.: *Subacute Erosive ("Peptic") Esophagitis: Clinical Study of 100 Cases*, A. M. A. Arch. Int. Med. **94**: 364-374 (Sept.) 1954.

[1] Syphilis, Bull. World Health Organ. **10**:507-626, 1954.

THE PRESIDENT'S PAGE

A MONTHLY MESSAGE

In previous letters I have stressed the importance of voluntary prepayment insurance as the best method of meeting the cost of hospitalization for those able to purchase such coverage and of direct payment by state and local political divisions of the expense of such care on the basis of local determination of the medical and economic needs of the low-income and noninsurable groups. The success, however, of all insurance and other third party payment plans depends on the fulfillment of certain conditions. These requirements are economical administration of public or insurance funds, avoidance of excessive utilization, and elimination of the overuse of the services supplied by hospitals and clinics. The growth of plans for the prepayment of the cost of hospitalization has been very rapid. It is natural that in certain areas and under some conditions abuses have developed. It seems important that we should examine this system and appraise its defects as well as its merits.



In all voluntary prepayment insurance plans certain factors are necessary to maintain their stability. Operating cost should be kept as low as is compatible with good administration and sound planning. Utilization must be safeguarded from the standpoint of both the numbers of admissions and the length of stay. Admission for the convenience of the physician or of the patient will prove destructive to insurance plans. Prolongation of stay beyond the point required for good medical care is equally objectionable. Both will lead to an increase in hospital costs, necessitate a higher insurance premium, or be reflected in a poorer quality of hospital services available.

We as physicians have a heavy and constant responsibility in this matter. Only the physician can properly determine when a patient is in need of hospital care and when that care should be terminated. He is responsible for expediting the patient's course in the hospital by promptly carrying out those procedures necessary for the correction of the patient's disability. The physician should also be discriminating in selecting the hospital services that he utilizes for his patient's care. Substituting multiple and often unnecessary clinical, laboratory, roentgenographic, and other technical procedures for an adequate history and physical examination not only is wasteful of medical resources but is not productive of good medicine.

Abuses in the form of unnecessary admissions, undue prolongations of stay, or the wasteful use of drugs or other hospital resources will greatly increase the cost of health care provided in a hospital. This naturally forces up premium rates and makes protection less accessible to those in the low-income group who are most in need of it. These same principles should apply to those situations in which health care is provided at the expense of the community or other third party agencies. The hospital has a similar responsibility for controlling the cost factor in these groups of patients. Improved administrative procedures that will make services quickly available and that will expedite admissions and discharges will reduce the cost burden not only for the insurance and the public cases but also for those who pay their way. Making hospital services available on a full week or at least a six day basis rather than the present four and a half to five day utilization would not only reduce the cost of the care of the individual but would lessen the number of hospital beds needed to service a community. Close cooperation between hospitals and physicians can accomplish a great deal in reaching these objectives.

A large part of the responsibility for the proper use of health protection also rests with the policyholder. He may demand hospitalization for his convenience rather than as a necessity or may wish to receive payment on certain services provided in his policy only if he is hospitalized. The fact that he purchased this particular policy at a lower rate because of this exception plays little part in his thinking. He forgets that insurance against the cost of illness is a mutual program. There are certain unpredictable factors such as the incidence of illness and its duration that can be averaged on a sound actuarial basis. What cannot be averaged on any basis is a lack of moral responsibility on the part of policyholders that leads to wasteful misuse of health insurance. Here again we as physicians can aid greatly by educating patients in proper use of health coverage.

The importance of the economical and efficient operations of plans providing insurance and other third party payments for the cost of illness cannot be overestimated. Waste is bound to result in higher premium costs, greater demands on tax funds, or a decrease in the quantity and quality of health services available in a community. If costs rise too sharply or if adequate services are not available the demand for some form of government insurance or aid may become irresistible.

I do not contend that this would provide more or better care at less cost, quite to the contrary. We do desire to have good medical care available to everyone. We believe it can be provided more effectively and economically through our present voluntary system. To make this a reality is not so much a matter of over-all planning as of the cooperation of every state and county society and every practicing physician in preventing waste of our medical resources. It will require also a close cooperation between physician groups and hospitals at every level. If our voluntary system should fail, the responsibility will be with us rather than with those who now so vigorously advocate some form of social or governmental insurance.

WALTER B. MARTIN, M.D., Norfolk, Va.

ORGANIZATION SECTION

OKLAHOMA STATE MEDICAL ASSOCIATION

To permit readers of THE JOURNAL *to become better acquainted with the activities of state medical associations, articles describing them will appear from time to time in these pages.*—ED.

The Oklahoma State Medical Association, now in its 61st year, resulted from the union of the Indian Territory Medical Association, established by 10 members in May, 1889, and the Oklahoma Territory Medical Association, organized by 29 physicians in May, 1893. During the joint session of those two organizations in Oklahoma City, May 7-9, 1906, it was resolved "that the plan of permanent union of the Oklahoma State Medical Association and the Indian Territory Medical Association provided for by the joint commission of the two bodies at Oklahoma City on July 12th, 1905, should now be consummated under such rules and regulations as shall be adopted by the joint bodies, and that the House of Delegates adopt the Constitutions and By-Laws prepared by the American Medical Association for State Associations." The association, which has since that time grown to a membership of 1,696, occupies a headquarters building at 1227 Classen Dr. Its official organ, *The Journal of the Oklahoma State Medical Association*, is a monthly publication established in 1906, whose forerunner, *The Oklahoma Medical Journal*, was founded in 1893. Officers of the association are: Dr. Bruce R. Hinson, Enid, president; Dr. R. Q. Goodwin, Oklahoma City, president-elect; and Dr. Clifford M. Bassett, Cushing, vice-president. The late Dr. Lewis J. Moorman, Oklahoma City, author of "Pioneer Doctor" and long-time editor-in-chief of the journal, was secretary-treasurer of the association at the time of his death, Aug. 2. He was one of the founders of the association, which he served as president, 1919-1920, and of which he was honorary president for life. Mr. Dick Graham is executive secretary and Mr. John Hart, associate executive secretary.

Headquarters of the Oklahoma State Medical Association, just outside the confines of downtown Oklahoma City.

ELEVENTH ANNUAL CONFERENCE OF WOMAN'S AUXILIARY TO A. M. A.

The 11th annual Conference of State Presidents, Presidents-Elect, and National Committee Chairmen of the Woman's Auxiliary to the A. M. A. will be held in Chicago at the Drake Hotel, Nov. 16 to 18, 1954. Theme of the conference is leadership in community health. Approximately 200 state representa and national leaders will be present for this conference. rogram will be in the form of panel discussions with the chairmen as moderators and the state presidents panel s. Panels will be presented on organization, legislan (a family doctor for every doctor's family, traffic ety, and maternal and child care), publications, public relations (with emphasis on National auxiliary project, and problems of the aging h), mental health, nurse recruitment, Auxiliary finances, and a talk on the World Medical Association. From the A. M. A., speakers will be Dr. Walter Martin, Dr. George F. Lull, Dr. Ernest B. Howard, Dr. Austin Smith, Dr. W. W. Bauer, Mr. Thomas Hendricks, Mr. Howard Brower, Mr. Robert Enlow, Mr. Hiram Jones, Mr. Leo Brown, Mr. Aubrey Gates, and Mr. C. Joseph Stetler. The last day of the conference will be spent at A. M. A. headquarters, where the conference will be guest of A. M. A. at luncheon. Preceding the luncheon will be a preview of new films and a tour of the building. A "dutch treat" dinner and opera performance has been planned for Tuesday night at the Kungsholm restaurant.

MENTAL RESEARCH THEME OF THIRD TELECAST

A television visit to mental research laboratories and modern mental hospitals will be featured on the March of Medicine at 5:30 p. m. (EST) Sunday, Oct. 31, over 63 stations of the NBC-TV network. The initial telecast in the latest fall-spring series, sponsored by Smith, Kline & French Laboratories in cooperation with the A. M. A., will be followed by a report from the A. M. A. Clinical Meeting in Miami, Fla. These two shows will be followed by a full series of medical reports to the nation in this third annual presentation of the March of Medicine. The Oct. 31 show, "Search for Sanity," will deal with problems of mental health, particularly schizophrenia. It will open with scenes in the New York State Psychiatric Institute. The host will be Dr. Lawrence C. Kolb, who heads the institute, the Department of Psychiatry at Columbia University College of Physicians and Surgeons, and the Psychiatric Service at Presbyterian Hospital. He will introduce various projects and the staff, including Heinrich B. Waelsch, M.D., principal research scientist in pharmacology; Franz J. Kallmann, M.D., associate scientist in medical genetics; Warren M. Sperry, Ph.D., principal research scientist in biochemistry; Leon Roizin, M.D., associate research scientist in neuropathology; and members of the department of experimental psychiatry under Paul Hoch, M.D. Television cameras also will be taken into the Hudson River State Hospital, Poughkeepsie, N. Y., where O. Arnold Kilpatrick, M.D., director, will be host. The cameras will show important phases of admissions, interviews, tests, and therapy.

POSTCONVENTION TOUR TO EUROPE

The American Medical Association, in conjunction with United Air Lines, has arranged a postconvention tour whereby physicians and their wives can go to Europe after the A. M. A. Annual Meeting in Atlantic City, N. J., June 6-10. The European medical tour party will leave New York's International Airport aboard special deluxe chartered airlines on Sunday, June 12, and they will arrive in Paris late Monday morning, June 13. The party will stay at luxurious hotels in the cities visited. Buses will provide side tours to historic and scientific points.

Arrangements are being made for medical meetings in Paris, Rome, Lucerne, and London. Leading European scientists will lecture on topics of current interest to all physicians. The return trip will be on Saturday, July 9, arriving in New York on the afternoon of July 10. Information and reservation blanks can be obtained from A. M. A. Post-Convention Tour, % United Air Lines, 5959 South Cicero Avenue, Chicago 38, Ill.

"FARM ACCIDENTS" EXHIBIT

How to keep healthy "down on the farm" is the theme of a new exhibit now available for showings at local fairs, expositions, and public gatherings from A. M. A.'s Bureau of Exhibits. Emphasizing the comparative hazards of farming with other industries, this informative farm accidents exhibit points up common farm accidents and ways of preventing them. Causes and prevention of accidents in and around the home also are highlighted. In addition, a special section is devoted to the role youth can play in farm accident prevention.

---

ti
ney.
such I
minum .
by benza
been used «
that it contains

MEDICAL NEWS

DISTRICT OF COLUMBIA

Interstate Scientific Assembly.—The first interstate scientific assembly of the Medical Society of the District of Columbia and the Medical Society of Virginia will be held at the Shoreham Hotel, Washington, D. C., Nov. 1 to 3. The District society will open its session at 9:30 a. m. Monday with a symposium on juvenile delinquency, and the Virginia society will have as its opening presentation "A Critical Appraisal of Certain Current Medical Therapies." At 2 p. m. Dr. Frank E. Wilson, Director, American Medical Association Washington Office, will discuss current medical legislation before the Virginia group, and at 3:30 p. m. there will be a panel discussion on medical expense plans. Tuesday morning panel discussion will follow the presentation of "Geriatric Gynecology" by Dr. Newlin F. Paxson, Philadelphia, and "Backache and Dysmenorrhea" by Dr. Robert N. Creadick, Durham, N. C. Panel discussion will also follow presentation of "Induction of Labor" by Dr. C. Hampton Mauzy, Winston-Salem, N. C., and "Relationship of Essential Hypertension to Pregnancy" by Dr. Robert Landesman, New York. The Davidson lecture, "The Physiology of Arteriovenous Fistulas," will be presented by Dr. George E. Schreiner, Washington, D. C., at 2 p. m. Discussions Tuesday for the District society will include the present status of antihypertensive drugs, management of arthritis, use of newer antibiotics, significance of nodular goiter, thyroid diseases, urinary tract infections, and enlarged prostates. The Tuesday session will end with a clinical pathological conference, 3:30 p. m. Dr. Ralph M. Caulk, Washington, D. C., will preside at the Wednesday morning session, when the following presentations will be made:

Cancer Detection in Rural General Practice, D. G. Miller Jr., Morgantown, Ky.
Indications for Use of Supervoltage Irradiation, Ralph Phillips, New York.
Cancer Chemotherapy, Jeanne C. Bateman, Washington, D. C.
Cancer Detection: Theoretical and Practical Dividends, Charles S. Cameron, New York.

An address, "The County Society, Its Responsibilities and Duties" by Dr. Walter B. Martin, Norfolk, Va., President, American Medical Association, will precede the noon luncheon. Dr. Theodore O. Winship, Washington, D. C., chairman, will preside at the afternoon session, when Dr. Hugh H. Hussey, Washington, D. C., will discuss "Preventive Medicine"; Dr. Owen H. Wangensteen, Minneapolis, "The Surgeon's Role in the Public Health Program"; and Dr. D. Anthony D'Esopo, New York, "Preventive Gynecology." Dr. Calvin T. Klopp, Washington, D. C., will serve as moderator for the panel discussion "What to Tell the Cancer Patient." The annual banquet will be followed by "Skitsophrenia," a variety show presented by an all-doctor-wife cast. Leo E. Brown, Director, A. M. A. Department of Public Relations, will have as his subject "You Can Be a Star on Medicine's PR Team" when he addresses the dinner for the District of Columbia and Virginia physicians' office staffs, Wednesday, 7 p. m.

ILLINOIS

Society News.—Newly elected officers of the Illinois Psychiatric Society include: Dr. Percival Bailey, Chicago, president; Dr. Franz G. Alexander, Chicago, vice-president; and Dr. Alex J. Arieff, Chicago, secretary-treasurer.

Psychiatric Lectures.—In its second series on treatment in psychiatry, the North Shore Health Resort (225 Sheridan Rd., Winnetka) offers a lecture, "The Medical and Psychological Value of a Thorough Physical Examination," by Dr. Stewart G. Wolf Jr., professor and head of the department of medicine, University of Oklahoma School of Medicine, Oklahoma City, and supervisor of clinical activities of the Oklahoma Medical Research Foundation, Nov. 3, 8 p. m., at the health resort.

Chicago

Personal.—Dr. Maurice H. Cottle, head, department of otolaryngology, Chicago Medical School, will be the guest speaker at a meeting of the Central Illinois Society of Ophthalmology and Otolaryngology at Urbana, Oct. 30 and 31, when he will deliver three papers: "Nasal Physiology," "Changing Concepts in Nasal Surgery," and "Rhinoplastic Procedures in the Treatment of Nasal Disease."

Meeting of Volunteer Medical Company.—Visitors are welcome at the meetings of Volunteer Medical Company 9-20, U. S. Naval Reserve, at the U. S. Veterans Research Hospital, room A 302, 333 Huron (MO. 4-6600), at 8 p. m. On Nov. 2 Dr. Israel Davidsohn will speak on erythroblastosis, and on Nov. 9 Dr. Townsend B. Friedman will discuss "Office Procedure in Allergic Investigation." The session of Nov. 19 will be devoted to a joint meeting with the Chicago Gynecological Society and will be held at the Knickerbocker Hotel at 8 p. m.

Conference on Community Nursing Needs.—The Chicago Council on Community Nursing announces that the Conference on Community Nursing Needs at the Congress Hotel, Nov. 4, will have as its theme "Meeting Community Nursing Needs Through Cooperative Action." The opening symposium on community needs for nursing service will have as moderator Dr. Edwin L. Crosby, director, American Hospital Association, and as collaborators Dr. Kenneth B. Babcock, director, Joint Commission on Accreditation of Hospitals; Dr. Harald M. Graning, regional medical director, Public Health Service, Department of Health, Education, and Welfare; and Dr. Donald J. Caseley, medical director, Research and Educational Hospitals and associate dean, University of Illinois College of Medicine. Dr. William B. Stromberg will participate in the afternoon program on cooperative action in meeting community nursing needs.

IOWA

Medical Forums.—The Scott County Medical Society, Davenport, in conjunction with the Davenport Newspapers, Inc., is again sponsoring a series of medical forums. Questions submitted in advance by the lay public are answered by a panel. On Oct. 14, "For Women Only" was presented; Oct. 21, "Psychiatry Today"; and on Oct. 28 dental problems were discussed by the Scott County Dental Society. On Nov. 4 the topic will be "Heart Disease."

Diabetes Institute.—On Nov. 5 an institute on diabetes will be conducted at University Hospitals, Iowa City, under the joint sponsorship of the State University of Iowa College of Medicine and the state department of health, division of gerontology, heart, and chronic disease. Dr. Walter L. Bierring, Des Moines, will preside at the morning program, which will include:

Some Current Problems in Diabetes, Robert C. Hardin, Iowa City.
Diet in Diabetes, Miss Elizabeth Yearick, Iowa City.
Pregnancy in Diabetes, William C. Keettel, Iowa City.

After luncheon at University Hospitals, Dr. Hardin will preside over the afternoon session:

Diabetic Neuropathy, Arthur G. Lueck, Des Moines.
Experiments Related to Diabetic Retinopathy and Kimmelstiel-Wilson's Disease, Bernard Becker.
Surgery in Diabetes, Sidney E. Ziffren, Iowa City.
The Heart in Diabetes, William B. Bean, Iowa City.

Following 6 o'clock dinner at the Veterans Administration Hospital, Iowa City, Dr. Hardin will also preside at the evening session, when "Office Treatment of Diabetes" will be discussed by Dr. Henry T. Ricketts, professor of medicine, University of Chicago School of Medicine.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

Postgraduate Course.—The Iowa Academy of General Practice announces a postgraduate course at the Hotel Montrose, Cedar Rapids, Nov. 4. Dr. Priscilla White, Joslin Clinic, Boston, will discuss "Management of Diabetes During Pregnancy" and "Recent Developments in Diabetic Therapy." Dr. Lee Forrest Hill, past president, American Academy of Pediatrics and chief of pediatric staff, Raymond Blank Memorial Hospital for Children, Des Moines, will have as his topics "Expected Behavior Patterns in Children" and "Acute Illness in Infancy." "Iowa Football Highlights" will be presented at luncheon, 12:15 p. m., by Mr. Tait Cummins, television and radio sports director, stations WMT and WMTV, Cedar Rapids.

MASSACHUSETTS

Symposium on Pediatric Rehabilitation.—In celebration of the 50th anniversary of the Massachusetts Hospital School in Canton, "Total Rehabilitation of the Mentally Normal, Handicapped Child" will be presented Nov. 6 at 10 a. m. Nils Y. Wessell, Ph.D., Sc.Ed.D., president, Tufts College, and former member of the Medical Advisory Board, Massachusetts Hospital School, will preside over the morning session, which will deal with social service problems in relation to the handicapped child, art in the treatment of the orthopedically handicapped child, and education of the handicapped child. A tour of the Massachusetts Hospital School will follow a buffet luncheon by courtesy of the board of trustees. Dr. Paul L. Norton, Brookline, chief of staff, Massachusetts Hospital School, will preside at the afternoon session. After a welcome by Dr. John J. Carroll, superintendent of the school, Dr. Charles H. Bradford, Boston, chairman, medical advisory board, will have as his topic "Justification of the Existence of the Massachusetts Hospital School." Presentation of cases in "Total Rehabilitation of the Handicapped Child" by Dr. Alfred R. Shands Jr., Wilmington, Del., medical director, Alfred I. duPont Institute of the Nemours Foundation, will conclude the program. Those planning to attend the luncheon should notify Dr. Carroll. The school is located in Canton, in the Blue Hills, near the junction of routes 138 and 128.

MICHIGAN

Society News.—The Michigan Society of Neurology and Psychiatry recently elected the following officers: Dr. Orus R. Yoder, Ypsilanti, president; Dr. Philip N. Brown, Northville, president-elect; Dr. Benjamin Jeffries, Detroit, secretary; and Dr. Louis Koren, Detroit, treasurer.——Newly elected officers of the Detroit Dermatological Society include Dr. Charles J. Courville, Detroit, president; Dr. Loren W. Shaffer, Detroit, president-elect; Dr. Coleman Mopper, Detroit, secretary-treasurer; and Dr. Roy H. Holmes, Muskegon, recorder.——Dr. Priscilla White, Boston, will talk to the Wayne County Medical Society, Nov. 1, about "The Young Diabetic," at the Wayne University Medical School Auditorium at 8:30 p. m.

MISSOURI

Clay County Centennial.—In commemoration of its 100th anniversary, the Clay County Medical Society will present the annual fall clinical conference at the Elms Hotel in Excelsior Springs, Nov. 4. At the noon luncheon there will be a panel discussion entitled "Our Government—Our Profession," with Dr. Roscoe L. Pullen, dean of the University of Missouri School of Medicine, Columbia, as moderator and the guest speakers of the afternoon as participants. At 2 p. m. these speakers will present the following program: "Mass Inoculation in Industry with Influenzal Virus Vaccine," Dr. William B. Hildebrand, Menasha, Wis., president, American Academy of General Practice; "The Challenge of Preventive Medicine," Dr. W. Palmer Dearing, Washington, D. C., deputy surgeon general, Department of Health, Education, and Welfare, Public Health Service; and "Ethics Within the Profession," Dr. Paul R. Hawley, Chicago, director, American College of Surgeons. A social hour at 5:30 p. m. will be followed by a dinner at which Dr. William A. Sodeman, professor and chairman, department of medicine, University of Missouri School of Medicine, will present a toast, "The Centennial of the Clay County Medical Society," and Dr. Thomas H. Alphin, Washington, D. C., assistant director, American Medical Association Washington Office, will have as his topic "Our Heritage Is Our Responsibility." Members of the medical profession are cordially invited.

NEW YORK

Symposium on Adrenal Function.—A symposium on adrenal function in infants and children (the 13th M. and R. Pediatric Research Conference) will be presented under the auspices of the department of pediatrics, the State University of New York, Upstate Medical Center, Nov. 3 and 4, at the auditorium of the State University of New York College of Medicine at Syracuse. Dr. Lytt I. Gardner, department of pediatrics, State University of New York College of Medicine at Syracuse, who will preside over the opening session Wednesday morning, will deliver the closing address, "Plasma Neutral 17-Ketosteroids in Pregnancy," Thursday afternoon. Dr. Lawson Wilkins, department of pediatrics, Johns Hopkins University School of Medicine, Baltimore, will preside at the Wednesday afternoon session and will conduct the round-table conference on present status of therapy of hyperadrenocorticism that will conclude the afternoon meeting. Dr. Julius B. Richmond, department of pediatrics, State University of New York College of Medicine at Syracuse, will preside Thursday morning and Dr. Robert Klein, department of pediatrics, University of Pittsburgh School of Medicine, Pittsburgh, Thursday afternoon. Wednesday morning Dr. Klein is scheduled to present "Serum Corticoid Response to ACTH in Infants Age Three Days."

New York City

Hospital News.—The Hospital for Joint Diseases has appointed Dr. Joseph E. Milgram director of orthopedic surgery.——At the Mount Sinai Hospital the clinical pathological conferences by Drs. Paul Klemperer and Alexander B. Gutman and staff will be resumed Nov. 3 at 3:30 p. m. Medical grand rounds by Dr. Gutman and staff will be resumed Nov. 5 at 3:00 p. m. in the Blumenthal Auditorium and will be held weekly thereafter at the same time.

Meeting on Cerebral Palsy.—The annual meeting of the Dental Guidance Council for Cerebral Palsy will be held at the Hotel Statler, 32nd Street and Seventh Avenue, Oct. 31, 10 a. m. Dr. Samuel S. Sverdlik, chief, department of physical medicine and rehabilitation, St. Vincent's Hospital, New York, will participate in the symposium that is planned for the dental, medical, and allied professions. Information may be obtained at the offices of the Dental Guidance Council for Cerebral Palsy, 47 W. 57th St., New York 19 (PLaza 3-3005).

Suiter Lecture on Cancer.—The A. Walter Suiter lecture, Nov. 4, at the New York Academy of Medicine, will take the form of a symposium entitled "Cancer: What We Know Today." The program, planned particularly to give the general practitioner a view of present knowledge about cancer, is as follows:

Changing Incidence of Cancer over the Years, Harold F. Dorn, Ph.D., Bethesda, Md.
Multiple Views on the Causation of Cancer, Harold L. Stewart, Bethesda, Md.
Natural History and Diagnosis of Cancer, Lauren V. Ackerman, St. Louis.
Modern Therapeutic Measures in Cancer and Their Effectiveness: Surgery, Owen H. Wangensteen, Minneapolis; Radiology, Richard H. Chamberlain, Philadelphia; Chemotherapy, Alfred A. Gellhorn, New York.

The Suiter lecture is presented under the auspices of the academy's committee on public health relations, to which Dr. Suiter at his death in 1925 left a legacy to finance lectures in public health or legal medicine. For this symposium the New York City Cancer Committee is cooperating with the committee on public health relations.

OHIO

Symposium on Malignant Disease.—"The Management of Far-Advanced Malignancy," a community service postgraduate educational program, supported in part by the Cuyahoga unit and the Ohio division of the American Cancer Society Field Army, will be given at St. Luke's Hospital, Cleveland, Nov. 4 and 5. "The General Problem" will be presented by Dr. John H. Lazzari, 9:15 to 10:15 a. m. At 10:30 a. m. Dr. John H. Nichols will consider the psychiatric aspects of the patient's adjustment. Palliative surgery will be discussed during the afternoon session by Drs. Donald M. Glover, Clifford L. Kiehn, Earle B. Kay, Julius W. McCall, Russell S. McGinnis, Gerald B. Hurd, and Wilbert H. McGaw. Friday Dr. Richard Hodges will speak on pediatric malignant disease, after which "Relief of Pain" will be presented by Dr. Brant B. Sankey (anesthesiology) and Dr. Spencer Braden (neurosurgery). Chemotherapy will be the topic of Dr. Charles S. Higley. The Friday afternoon program consists of "Roentgenology" by Drs. Donald D. Brannan and Herman F. Inderlied; "Radioactive Materials" by Dr. Brown Dobyns; and "Endocrinology" by Dr. Delbert M. Bergenstal, Chicago. For the evening session "Combined Techniques" will be explained by Dr. Charles Doan, Columbus. Unless otherwise indicated, speakers are Cleveland physicians.

PENNSYLVANIA

Postgraduate Hospital Training.—The Commission on Graduate Education, Medical Society of the State of Pennsylvania, is sponsoring courses in postgraduate medical training at Albert Einstein Medical Center starting Nov. 3 and at Allentown Hospital starting Nov. 4. Enrollees are divided into three sections; section A will be originally assigned to medicine, section B to surgery, and section C to the specialties. At the end of five weeks all groups will rotate to a different service, making it possible to cover all three services in 15 weekly all-day sessions. Attendance certificates will be given those who attend 70% or more of the sessions. The courses are approved for credit by the American Academy of General Practice. Registration fee is $50. Outlines will be mailed on request to the commission, 230 State St., Harrisburg.

SOUTH CAROLINA

Founders' Day.—The Medical College of the State of South Carolina, Charleston, will observe Founders' Day, Nov. 4, after a two day postgraduate seminar. On Thursday morning the following program will be presented:

Emergency Conditions of the Newborn Infant, McLemore Birdsong, Charlottesville, Va.
Renal Deficiency Associated with Secondary Shock, Virgil H. Moon, Coral Gables, Fla.
Some Aspects of Cancer Research, William E. Smith, New York.
The Rheumatoid Arthritic Cripple: Total Rehabilitation, Edward W. Lowman, New York.

After luncheon the Alumni Memorial House will be dedicated and the dormitory inspected.

TEXAS

Tumor Seminar.—The annual Tumor Seminar sponsored by the San Antonio Society of Pathologists in conjunction with the College of American Pathologists and the Texas division of the American Cancer Society will be held Nov. 6 at Brooke Army Hospital, San Antonio. The meeting will be devoted to the pathology of bone tumors, brain tumors, genitourinary tumors, and radiation reaction. The speakers, from the Armed Forces Institute of Pathology, Washington, D. C., will include Gen. Elbert DeCoursey, director, who will discuss radiation reaction; Dr. Webb E. Haymaker, chief of the neuropathological section; Dr. Lent C. Johnson, chief of the orthopedic pathology section; and Dr. Fathollah K. Mostofi, chief of the genitourinary pathology section. Information may be obtained from Dr. Alvin O. Severance, Baptist Memorial Hospital, San Antonio 2.

WASHINGTON

Symposium on Cardiovascular Disease.—The sixth annual Symposium on Heart Disease will be presented by the Washington State Heart Association and the Washington State Department of Health at the University of Washington Medical School auditorium, Seattle, Nov. 5 and 6. Guest speakers include Drs. Eugene A. Stead, Durham, N. C.; Richard V. Ebert, Chicago; and Richard H. Lyons, Syracuse, N. Y. The theme of the symposium, "Application of Cardiopulmonary Reflexes to Clinical Practice," will be developed through discussion of "The Value of Funduscopic Examination in Vascular Disease," "Therapeutic Use of Ganglionic Blocking Agents in Hypertension," "Reflex Drives to Respiration and Their Distortion in Disease," and other topics. This symposium is the equivalent of nine hours of formal postgraduate training for members of the Academy of General Practice. There will be no registration fee. The scheduled dates fall on the Homecoming weekend at the University of Washington, which is also the weekend of the University of Washington-California football game.

WEST VIRGINIA

Cardiologists Meet in Huntington.—Dr. E. Cowles Andrus, Baltimore, president, American Heart Association and associate professor of medicine, Johns Hopkins University School of Medicine, and Dr. A. Carlton Ernstene, chief, medical service, Cleveland Clinic, will be the guest speakers at the annual meeting of the West Virginia Heart Association at the Hotel Frederick, Huntington, Nov. 5. They will both be present at a clinical session with presentation of cases at St. Mary's Hospital at 8 a. m. At the scientific session, which will be called to order at 2 p. m. by Dr. Walter C. Swann, Huntington, president of the association, Dr. Andrus will present "The Indications for Mitral Commissurotomy and Its Consequences" and Dr. Ernstene, "The Complications and Sequelae of Myocardial Infarction." Both physicians will participate at 8 p. m. in an open public forum after a banquet at the Hotel Frederick.

WISCONSIN

Orthopedic Field Clinics.—The Bureau for Handicapped Children, State Department of Public Instruction, has scheduled the following orthopedic field clinics for November and December: Rhinelander, Nov. 3 and 4; Eau Claire, Nov. 11 and 12; Fond du Lac, Dec. 1 and 2; and Chippewa Falls, Dec. 9 and 10. The clinics are conducted for persons under 21 years of age who come within the state's definition of a crippled child. It is preferred that referral be made by the family physician, but when this is not feasible, arrangements may be made by writing to the bureau. Forms for the purpose of referral should be requested from the bureau in advance of the clinic date. Inquiries concerning these clinics may be addressed to the Bureau for Handicapped Children, 146 North, State Capitol, Madison 2.

Faculty Promotions and Retirements.—The University of Wisconsin Medical School, Madison, announces the following promotions in rank for members of its staff: Meryl M. Miles, M.S., from assistant professor to associate professor of anatomy; Dr. William H. Dornette from instructor to assistant professor of anesthesiology; Miss Dorothy I. Briggs and Miss Margaret E. Bryce from instructor to assistant professor of physical medicine; Dr. Henry A. Peters from instructor to assistant professor of neuropsychiatry; Gerald A. Le Page, Ph.D., from associate professor to professor and Roswell K. Boutwell, Ph.D., from assistant professor to associate professor of oncology; Dr. Anthony R. Curreri from associate professor to professor; Drs. Kenneth E. Lemmer and Herman W. Wirka from associate to professor and Dr. Manucher Javid from instructor to assistant professor in the department of surgery. Dr. Frederick Allison Davis, who has retired as chairman of the subsection on ophthalmology, has been named emeritus professor of ophthalmology, and Dr. Arthur L. Tatum, retiring as chairman of the department of pharmacology, has been appointed emeritus professor.

HAWAII

Dr. Quisenberry to Direct Cancer Society.—Dr. Walter B. Quisenberry, Honolulu, has resigned as director, division of preventive medicine, Territorial Health Department, which he has been since 1951, and will become executive director of the Hawaii Cancer Society, to fill the position held by Mr. Theodore H. Rhea, M.P.H., until his death July 10. Dr. Quisenberry helped to reorganize the society in 1948 and has been one of its directors since that time. Dr. Quisenberry, who graduated from the College of Medical Evangelists, Loma Linda-Los Angeles, served his internship in the Henry Ford Hospital, Detroit, and later practiced in Long Beach, Calif. After service in the regular corps of the U. S. Public Health Service (1942-1946), he was named assistant professor and acting head of the department of preventive medicine and public health at his alma mater. In 1947 he went to Hawaii to be chief of the bureau of venereal diseases and cancer control.

GENERAL

Safety Council Appoints General Manager.—Maj. Gen. George Craig Stewart, who will retire from the Army Oct. 31, has been appointed to the newly created post of general manager of the National Safety Council. He is presently serving as director of the office of military assistance in the Office of the Secretary of Defense.

Phi Delta Epsilon Reunion.—The Phi Delta Epsilon medical fraternity will celebrate its 50th anniversary year with a convention at the Waldorf-Astoria Hotel, New York, Dec. 26 to 28. Reservations will not be accepted after Dec. 6. All reservations must be sent to Dr. Seymour H. Rinzler, 120 Central Park South, New York. Subscription: $100 per couple.

Meeting on Arteriosclerosis.—The American Society for the Study of Arteriosclerosis will hold its annual meeting at the Sheraton Hotel, Chicago, Oct. 31 and Nov. 1. Dr. Carl J. Wiggers, emeritus professor of physiology, Western Reserve University School of Medicine, Cleveland, will present "Cardiovascular Concepts: The Past Fifty Years" at the luncheon on Sunday. Dr. Russell L. Holman, New Orleans, will give the presidential address on pathogenesis in atherosclerosis at 2:20 p. m. In all, 33 presentations will be made and 30 papers read by title.

American Academy for Cerebral Palsy.—The American Academy for Cerebral Palsy will hold its eighth annual meeting at the Williamsburg Lodge and Inn, Williamsburg, Va., Nov. 4 to 6. The scientific sessions will open at 1:30 Thursday afternoon with presentation of "The Cerebral Palsy Problem in 1954" by Dr. Meyer A. Perlstein, Chicago, president of the academy, who, with Maury Massler, D.D.S., Chicago, will present "Neonatal Dental Dysplasias" Friday at 11:30 a. m. The Thursday session will end with a symposium, "Devices Found Useful in the Treatment of Children with Cerebral Palsy." Among other topics to be presented during the scientific sessions will be oculomotor defects, speech and hearing evaluation, aphasia, treatment of the spastic hemiplegic and athetoid quadriplegic, sensory disturbances, and surgical relief of athetosis and other hyperkinesias.

Meeting on Occupational Medicine.—The Central States Society of Industrial Medicine and Surgery will meet Nov. 6 at the Institute of Physical Medicine and Rehabilitation, Forest Park Foundation, St. Francis Hospital, Peoria, Ill. The morning session will include a clinic; physical medicine and rehabilitation diagnostic and treatment procedures as related to industrial back injuries; differential diagnosis and treatment of low back injuries as related to the application of heat, massage, and therapeutic exercise; and cervical radiculitis as related to industrial injuries and work posture. During the afternoon there will be discussion of emotions and their relation to the health problems of industry, adjustment counseling, emotional stress as it affects work assignments, psychosomatic situations that project themselves into health problems, and electromyography as related to industrial problems. Typical electromyographic abnormal oscilloscopic demonstrations of normal and abnormal electromyographic patterns will be presented, and the present-day uses of electromyograms in differential diagnosis of interspinal lesions, their significance in diagnosis and prognosis, will be considered.

American Therapeutic Society.—The 55th annual meeting of the American Therapeutic Society will be held at the Chase Hotel, St. Louis, Nov. 4 to 7. Dr. William B. Rawls, New York, will deliver the presidential address, "Cortisone: A Five Year Study," before the luncheon on Saturday. The third annual Lewis H. Taylor lecture, "Therapy of the Leukemias and Lymphomas," will be given by Dr. Edward H. Reinhard, associate professor of medicine and radiology, Washington University School of Medicine, St. Louis, Friday afternoon, after which two addresses will be delivered by invitation: "The Saga of Lipotropic Therapy" by Dr. Thaddeus D. Labecki, Jackson, Miss., and "Factors Other Than Lipotropic Agents in the Treatment of Portal Cirrhosis" by Dr. Goronwy O. Broun, St. Louis. The Saturday afternoon session will end with a symposium on electrolyte disturbances, moderated by Dr. E. Sterling Nichol, Miami, Fla. Participants will include Dr. George T. Harrell, Gainesville, Fla. (by invitation); Dr. Frank W. Konzelmann, Washington, D. C.; and Dr. Donald W. Seldin, Dallas, Texas (by invitation). Dr. Rawls will serve as toastmaster at the annual banquet, 8 p. m., and Bob Burns, sports editor of the *St. Louis Globe-Democrat*, will present "The Dangerous Side of Sports."

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States and its territories and possessions in the weeks ended as indicated:

Area	Oct. 2, 1954		Oct. 3, 1953, Total
	Paralytic Type	Total Cases Reported	
New England States			
Maine	7	9	19
New Hampshire	..	4	3
Vermont	..	1	7
Massachusetts	15	75	42
Rhode Island	..	8	18
Connecticut	2	15	20
Middle Atlantic States			
New York	35	107	159
New Jersey	29	49	40
Pennsylvania	..	91	78
East North Central States			
Ohio	41	171	129
Indiana	17	42	22
Illinois	59	163	88
[illegible]	39	90	119
[illegible]	22	46	63
West North Central States			
Minnesota	15	43	109
Iowa	31	72	24
[illegible]	14	30	18
[illegible]	..	4	6
South Dakota	..	10	17
Nebraska	23	52	4
Kansas	15	52	23
South Atlantic States			
Delaware	2	5	..
Maryland	9	14	23
District of Columbia	4	5	2
Virginia	17	32	26
West [illegible]	17	35	23
North [illegible]	18	33	21
South [illegible]	4	6	1
Georgia	10	24	7
Florida	91	132	17
East South Central States			
Kentucky	13	25	8
Tennessee	9	32	11
Alabama	7	12	11
Mississippi	..	7	4
West South Central States			
Arkansas	6	10	5
[illegible]	10	17	5
[illegible]	4	18	8
Texas	37	93	36
Mountain States			
Montana	1	7	17
Idaho	..	8	6
Wyoming	2	10	2
Colorado	9	18	3
New Mexico	3	15	6
Arizona	3	11	9
Utah	..	21	11
Nevada	..	3	2
Pacific States			
Washington	14	29	24
Oregon	3	11	17
California	93	189	152
Territories and Possessions			
Alaska	5	9	..
Hawaii	2	2	..
Puerto Rico	..	..	3
Total	757	1,962	1,455

Meeting on Tropical Medicine.—The American Society of Tropical Medicine and Hygiene will meet jointly with the American Academy of Tropical Medicine and the American Society of Parasitologists at the Hotel Peabody, Memphis, Tenn., Nov. 3 to 6. In all, 184 presentations have been scheduled. A symposium on schistosomiasis will be presented Thursday at 2 p. m. Friday morning the 19th annual Charles Franklin Craig lecture, "Recent Advances in Our Knowledge of Dengue and Sandfly Fever," will be given by Dr. Albert B. Sabin, Cincinnati. This will be followed by the presidential address of Elery R. Becker, Sc.D., Ames, Iowa, president of the American Society of Parasitologists. The presidential address of the American Society of Tropical Medicine and Hygiene will be delivered Friday evening by Dr. Frederick J. Brady, Washington, D. C., and that of the American Academy of Tropical Medicine by Dr. George R. Callender, Washington, D. C. These addresses, presented during the joint session of the American Society of Tropical Medicine and Hygiene and the American Academy of Tropical Medicine, will follow presentation of the Theobald Smith medal of the academy by Willard H. Wright, Ph.D., Bethesda, Md.

International Medical Assembly.—The International Medical Assembly (Interstate Postgraduate Medical Association of North America) will convene Nov. 1 to 4 in the Municipal Auditorium, Minneapolis. In all, 33 clinics will be presented. At 4 p. m. Monday, Dr. Owen H. Wangensteen, Minneapolis, will discuss "Surgery of Peptic Ulcer." At 7:30 p. m. the following program will be presented:

Psychomotor Seizures, or Temporal Lobe Epilepsy, Ian A. Brown, Minneapolis.
Collagen Disturbances Encountered in General Practice, William S. Middleton, Madison, Wis.
What Can the Bronchoscope Do for the General Practitioner, Chevalier L. Jackson, Philadelphia.
X-Ray Diagnosis of Cancer of the Lung, Leo G. Rigler, Minneapolis.

Tuesday, 4 p. m., Dr. Julius Lempert, New York, will discuss "Modern Otology—Its Stepping Stones and Stumbling Blocks"; Dr. Charles D. Creevy, Minneapolis, "The Correction of Hypospadias"; and Chauncey D. Leake, Ph.D., Galveston, Texas, "Drug Allergy." At 8 p. m. the following addresses will be given:

Ulcerative Colitis in Children, J. Arnold Bargen, Rochester, Minn.
Prognosis in Mitral Stenosis, Charles W. Crumpton, Madison, Wis.
Occiput Posterior, David N. Danforth, Evanston, Ill.

Wednesday afternoon Dr. Karver L. Puestow, Madison, Wis., will present "Conservative Treatment of Stenosing Diseases of the Esophagus," after which Drs. R. Lee Clark Jr. and William O. Russell, Houston, Texas, will present "Carcinoma in Situ" and Dr. J. Grafton Love, Rochester, Minn., will deliver an address, "Surgical Treatment of Pituitary Tumors." The afternoon program will include:

Management of Prolonged Labor, M. Edward Davis, Chicago.
Lessons and Problems of a Maternal Mortality Study, John L. McKelvey, Minneapolis.
Rationale and Value of Tracheotomy in Severe Preeclampsia and Eclampsia, Conrad G. Collins, New Orleans.

The assembly dinner will be held Wednesday at 7 p. m. The address of welcome by Dr. Charles A. Aling, Minneapolis, president, Hennepin County Medical Society, will be followed by "The Physician's Responsibility to the Aging Population" by Dr. Meakins and presentation of Dr. Charles W. Mayo, Rochester, Minn., president-elect of the association. The assembly will end Thursday afternoon with the following program:

Physiologic Concepts of the Hypersensitivity State, Charles F. Code, Rochester, Minn.
Preparation of the Patient for Intestinal Resection, Edward S. Judd Jr., Rochester, Minn.
Peptic Ulcer of the Esophagus, Herbert W. Schmidt, Rochester, Minn.
Uveitis as a Medical Problem, F. Phinizy Calhoun Jr., Atlanta, Ga.
Male Hypogonadism, Laurentius O. Underdahl, Rochester, Minn.

Society for the Crippled.—The National Society for Crippled Children and Adults will hold its annual meeting Nov. 2 to 6 at the Hotel Statler, Boston. At 2:30 p. m. Tuesday Dr. Charles O. Bechtol, New Haven, Conn., will participate in a physical therapy seminar on the principles of bracing. The general session will open Thursday, 9:30 a. m., with a keynote address, "Rehabilitation for Independence," by the Hon. John F. Kennedy, U. S. Senator from Massachusetts, after which Dr. Allen F. Voshell, Baltimore, will speak. The luncheon address, 12:30 p. m., will be given by Mrs. Ivy Baker Priest, Treasurer of the United States. A medical seminar, "Rehabilitation of the Amputee, the Arthritic, the Hemiplegic, the Industrial Back, the Cardiac, the Poliomyelitic," will be presented at 3 p. m. by Drs. Augustus Thorndike, Eugene E. Record, Heinrich G. Brugsch, Arthur L. Watkins, Alexander P. Aitken, and William T. Green, all of Boston, and Richard J. Clark, Winchester, Mass. The Bay State banquet at 7:30 p. m. will be addressed by Mr. Basil M. O'Connor, president, National Foundation for Infantile Paralysis. At 9:15 a. m. Friday Dr. Howard A. Rusk, New York, will open the general session with "Crippled People in a Crippled World." At 2:30 p. m. Dr. William C. Menninger, Topeka, Kan., will discuss "Psychological Aspects of Rehabilitation for Independence." The president's dinner at 7:30 p. m. will honor Judge J. Raymond Tiffany, president, National Society for Crippled Children and Adults.

Congress of Neurological Surgeons.—The Congress of Neurological Surgeons will hold its annual meeting at the Waldorf-Astoria Hotel, New York, Nov. 4 to 6. Dr. Kenneth G. McKenzie, Toronto, Canada, president, will open the sessions at 11:15 a. m. Thursday with an address, "Brain Tumor with Special Reference to Acoustic Neuroma and Benign Gliomas." On Friday at the same time his topic will be "Experiences with Sympathectomy for Vascular Hypertension and Leukotomy for Mental Disturbance" and on Saturday, "Spasmodic Torticollis, Ménière's Syndrome, and Results Following Tractotomy for Trigeminal Neuralgia." Luncheon and group discussions with New York neurosurgeons as moderators will be held on Thursday and Friday. At 2 p. m. Thursday Dr. Donald B. Freshwater, Pasadena, Calif., will preside at a symposium on cervical trauma in which orthopedic aspects will be presented by Dr. Edward M. Winant, New York; neurosurgical aspects by Dr. Frank H. Mayfield, Cincinnati; rehabilitation aspects by Dr. Howard A. Rusk, New York; and medicolegal and compensation aspects by Mr. W. Scott Allen of Liberty-Mutual Insurance Company. At 9 a. m. Friday Dr. Adrien Verbrugghen, Chicago, will serve as moderator for a panel discussion of cervical trauma, with questions from the floor. A cocktail party and banquet will be held at 7 p. m. Friday. The Saturday sessions will open with a panel-symposium, "Medicolegal Aspects of Head Injury," with Dr. A. Earl Walker, Baltimore, as moderator.

Mine Workers Welfare and Retirement Fund.—The annual report of the United Mine Workers of America Welfare and Retirement Fund for the fiscal year ended June 30, 1954, shows that receipts for the year amounted to $134,847,779, while expenditures totaled $133,307,466. The unexpended balance in the trust fund was $93,565,044. Benefits paid to miners and their families during the year amounted to $129,296,261. Only 3% of the total expenditure for the year went for administrative expenses. In the 12 month period, 276,763 persons received benefits. Since the United Mine Workers negotiated for a welfare program in May, 1946, total revenues to the fund were $753,196,122. Pensions accounted for the largest part of expenditures, amounting to $260,027,905. Hospital and medical care accounted for $203,479,715. Cash aid of $105,006,474 was paid to disabled miners, and $72,781,972 in cash benefits went to widows, orphans, and survivors of coal diggers. Since the fund was established in 1946, benefits have been paid out totaling $641,296,068.

As of June 30, 1954, there were 54,937 aged, retired miners receiving the pension of $100 a month. Miners are eligible to retire at age 60, after 20 years' service within the last 30 years. The report showed that of the 7,130 miners who retired during the past fiscal year, 37% applied because of physical disabilities.

Widows, orphans, and other dependents of coal miners received a total of $7,524,684 in cash benefits during the year. Funeral expense and survivors benefits of $3,069,277 were paid to 3,768 families of deceased miners. An additional $4,395,373 in cash was paid to assist 24,150 widows and orphans. The latter type of temporary benefit was discontinued by the trustees as of April 1, 1954, as was the cash assistance to disabled miners, which amounted to $5,469,354 in the fiscal term. The hospital and medical care provided by the fund totaled $52,209,912 in the year ended June 30. The report details also the fund's work in physical rehabilitation of miners and their families and progress in the construction of 10 hospitals for fund beneficiaries. The miners' fund is financed by the 40 cent per ton royalty on all bituminous coal produced by the companies under contract with the union. It is administered by three trustees: John L. Lewis, president of the United Mine Workers of America; Charles Owen, Imperial Coal Company; and Josephine Roche, neutral trustee and director of the fund.

LATIN AMERICA

Surgical Assembly in Mexico City.—The 11th Mexican Surgical Assembly at the Hospital Juarez in Mexico City, Nov. 14 to 20, will have a number of guests from other countries on the American continent and Europe, including Drs. Herbert C. Maier, Frederick H. Amendola, George W. Slaughter, Robert H. Kennedy, J. Lawrence Pool, Ivan Kempner, James M. Winfield, and Francis M. Donehue of New York. The facilities of the new University City Medical School and other new hospitals will also be available. In addition to the scientific sessions, which will include presentation of papers, films, and television demonstrations, social festivities and short trips of touristic interest have been arranged.

FOREIGN

Meetings of the International College of Surgeons.—The International College of Surgeons announces the following meetings:

Foundation meeting of the Japanese section, under the direction of Professors Hiroshige Shiota and Komei Nakayama, in Osaka, Japan, Oct 30

Meeting of the Philippine section in Manila, Philippine Islands, Nov. 3

Inauguration meeting of the China Chapter at Hong Kong under the direction of Drs J Heng Liu, Kenneth Hui, and Y. P Chan, Nov. 5

Foundation meeting of the Thailand section at Bangkok, Thailand, under the direction of Major Nitya Pausvedya, director general, department of medical service, Ministry of Public Health, Nov. 7

Biennial meeting of the Indian section at Bombay, India, under the direction of Mr. R. N. Cooper, Dr. V. P Mehta, and Col. K. G. Pandalai, Nov. 10

Meeting of the Pakistan section at Karachi, Pakistan, Nov. 14

Meeting of the Turkish section at the University of Istanbul, Turkey, Nov. 17

Meeting of the Israeli section at Jerusalem, Israel, King David Hotel, Nov. 20

United States surgeons, fellows of the International College of Surgeons, who will attend these meetings include Drs. Harry E. Bacon, Philadelphia; Henry W. Meyerding, Rochester, Minn.; Moses Behrend, Philadelphia; Sebastian J. Carnazzo, Omaha; Ulysses G. Dailey and Max Thorek, Chicago; J. Harry Hayes, Little Rock, Ark.; Clifford W. Mills, Norwalk, Conn.; Nolie Mumey, Denver; William C. Speidel, Seattle; and many others.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1954 Clinical Meeting, Miami, Fla., Nov. 29-Dec. 2.

1955 Annual Meeting, Atlantic City, N. J., June 6-10.

1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.

1956 Annual Meeting, Chicago, June 11-15.

1956 Clinical Meeting, Seattle, Nov. 27-30.

National Medical Public Relations Conference, McAllister Hotel, Miami, Fla, Nov 28 Mr. Leo E. Brown, 535 North Dearborn St., Chicago 10, Director

American Academy for Cerebral Palsy Williamsburg Inn, Williamsburg, Va Nov 4 6 Dr Harry E Barnett, 116 South Michigan Blvd, Chicago 3, Secretary

American Academy of Dental Medicine, Hotel Statler, New York, Dec. 5 Dr William M Greenhut, 124 East 84th St., New York 28, Secretary

American Academy of Dermatology and Syphilology, Palmer House, Chicago, Dec 4-9 Dr J E. Rauschkolb, P O Box 6565, Cleveland 1, Secretary.

American Academy of Obstetrics and Gynecology, Palmer House, Dec. 14. Dr Paul Hodgkinson, 116 South Michigan Ave, Chicago 3, Secretary.

American Association of Medical Clinics, Jung Hotel, New Orleans, Nov. 12-14. Dr Arthur H Griep, 420 Cherry St, Evansville, Ind., Secretary.

American Association for the Surgery of Trauma, Hotel Claridge, Atlantic City, N. J., Nov 11 13 Dr James K. Stack, 700 North Michigan Blvd, Chicago 11, Secretary

American College of Cardiology, Interim Meeting, Algiers Hotel, Miami Beach, Fla, Nov. 11-13. Dr. Philip Reichert, 140 West 57th St., New York 19, Secretary.

American College of Surgeons, Convention Hall, Atlantic City, N. J, Nov. 14-19. Dr. Michael L. Mason, 40 East Erie St., Chicago 11, Secretary.

American Congress on Obstetrics and Gynecology, Palmer House, Dec. 13-17. Dr. R. Gordon Douglas, 116 South Michigan Ave, Chicago 3, General Chairman.

American Dental Association, Miami, Fla, Nov. 8-11. Dr. Harold Hillenbrand, 222 East Superior St, Chicago 11, General Secretary.

American Society for the Study of Arteriosclerosis, Sheraton Hotel, Chicago, Oct. 31-Nov. 1. Dr. O. J. Pollak, P. O. Box 228, Dover, Del, Secretary.

American Society of Tropical Medicine and Hygiene, Hotel Peabody, Memphis, Tenn, Nov. 4-6 Dr. John E Larsh Jr, Dept. of Parasitology, School of Public Health, Univ. of North Carolina, Chapel Hill, N. C, Secretary.

American Therapeutic Society, The Chase Hotel, St Louis, Nov 4-7, Dr. Oscar B. Hunter, 915 Nineteenth St. N W., Washington, D. C, Secretary.

Association of Military Surgeons of the United States, Hotel Statler, Washington, D C, Nov 29-Dec. 1. Dr. Robert E. Bitner, Armed Forces Institute of Pathology, Washington 25, D C., Secretary.

Association of State and Territorial Health Officers, Hotel Washington, Washington, D C, Dec. 6-10. Dr. Franklin D. Yoder, State Board of Health, Cheyenne, Wyo, Secretary.

Conference on Myasthenia Gravis, University of Pennsylvania School of Medicine, Philadelphia, Dec. 8-9. Mrs. Agnes K. Peterson, 2 East 103rd St., New York 29, Executive Director.

Congress of Neurological Surgeons, The Waldorf-Astoria, New York, Nov 4-6 Dr. Bland W. Cannon, 1092 Madison Ave., Memphis, Tenn, Secretary.

District of Columbia, Medical Society of the, Hotel Shoreham, Washington, D. C., Nov. 1-3. Mr. Theodore Wiprud, 1718 M St N W., Washington, D C, Secretary

Industrial Hygiene Foundation of America, Mellon Institute, Pittsburgh, Nov. 17-18 Dr C. Richard Walmer, Mellon Institute, Pittsburgh 13, Managing Director.

Interstate Post Graduate Medical Asssociation of North America, Municipal Auditorium, Minneapolis, Nov. 1-4 Dr. Erwin R Schmidt, 1300 University Ave., Madison 6, Wis., Secretary.

Inter-Society Cytology Council, Statler Hotel, Boston, Nov. 12-13 Dr. John B Graham, 32 Fruit St., Boston, Chairman, Program Committee.

Medical Society Executive Conference, Everglades Hotel, Miami, Fla, Nov. 29. Mr. William H. Bartleson, 3036 Gillham Road, Kansas City 8, Mo., Secretary.

National Society for Crippled Children and Adults, Statler Hotel, Boston, Nov. 3-5 Mr. Lawrence J. Linck, 11 South LaSalle St., Chicago 3, Executive Director

Post-Graduate Clinic, Michigan Academy of General Practice, Sheraton-Cadillac Hotel, Detroit, Nov 10-11. Dr. F. P. Rhoades, 970 Maccabees Bldg, Detroit 2, Chairman.

Puerto Rico Medical Association, Santurce, Dec. 8-12. Dr. Luis R. Guzman-Lopez, Box 9111, Santurce, Secretary.

Radiological Society of North America, Biltmore Hotel, Los Angeles, Dec. 5-10 Dr. Donald S. Childs, 713 East Genesee St, Syracuse 2, N. Y., Secretary.

Regional Meetings, American College of Physicians:
  Michigan, Grand Rapids, Dec. 4. Dr. H. Marvin Pollard, 1313 East Ann St., Ann Arbor, Governor.
  New Jersey, Newark, Nov. 3. Dr. Edward C. Klein Jr., 6 South Kingman Rd, South Orange, N. J., Governor.
  Western New York, Syracuse, Nov. 19. Dr. Edward C. Reifenstein, 109 South Warren St, Syracuse 2, Governor.

Seaboard Medical Association, Hotel Cherry, Wilson, N C, Nov. 14-16 Dr. James M. Habel Jr., 191 Bosley Ave, Suffolk, Va, Secretary.

Southern Medical Association, St Louis, Nov. 8-11. Mr. C P. Loranz, 1020 Empire Bldg, Birmingham 3, Ala, Secretary.

Southern Society of Cancer Cytology, St Louis, Nov. 8-11. Dr. J. Ernest Ayre, 1155 N.W. 14th St, Miami, Fla, Secretary.

Southern Surgical Association, Hollywood Beach Hotel, Hollywood, Fla, Dec. 7-9. Dr. George G. Finney, 2947 St. Paul St, Baltimore 18, Secretary.

Southwestern Medical Association, Hotel Paso del Norte, El Paso, Texas, Nov. 17-19. Dr. Celso C. Stapp, 800 Montana St, El Paso, Texas, Secretary.

Virginia, Medical Society of, Shoreham Hotel, Washington, D. C., Oct 31-Nov. 3. Mr. Robert I. Howard, 1105 W. Franklin St, Richmond, Executive Secretary.

Western Surgical Association, The Broadmoor, Colorado Springs, Colo, Dec. 2-4. Dr. Michael L. Mason, 154 East Erie St, Chicago 11, Secretary.

FOREIGN AND INTERNATIONAL

Commonwealth Health and Tuberculosis Conference, Royal Festival Hall, London, England, June 21-25, 1955. Mr. J. H. Harley Williams, Tavistock House North, Tavistock Square, London, W.C.1, England, Secretary General

Congress of International Association of Applied Psychology, London, England, July 18-23, 1955 Dr. C. B. Frisby, National Institute of Industrial Psychology, 14 Welbeck St, London, W.1, England, President.

Congress of the International Diabetes Federation, Cambridge, England, July 4-8, 1955. Mr James G. L. Jackson, 152 Harley St., London, W 1, England, Executive Secretary General.

European Congress on Rheumatism, Scheveningen, The Hague, Netherlands, June 13-17, 1955. Dr. H. van Swaay, Pieter Bothstraat 12, The Hague, Netherlands, Secretary.

Health Congress of the Royal Sanitary Institute, Bournemouth, England, April 26-29, 1955. Mr. P. Arthur Wells, Royal Sanitary Institute, 90 Buckingham Palace Road, London, S W.1, England, Secretary.

Inter-American Congress of Radiology, Shoreham Hotel, Washington, D. C, U. S A, April 24-29, 1955. Dr. Eugene P. Pendergrass, 3400 Spruce St, Philadelphia 4, Pa., U. S A, Secretary-General

Inter American Session, American College of Surgeons, Universidad Mayor de San Marcos de Lima, Lima, Peru, S A., Jan 11-14, 1955. Dr. Michael L. Mason, 40 East Erie St., Chicago 11, Ill., U. S. A., Secretary.

International Anatomical Congress, Paris, France, July 25-30, 1955. Prof Gaston Cordier, 45, rue des Saints-Pères, Paris 6e, France, Secretary-General

International Congress of Biochemistry, Brussels, Belgium, Aug. 1-6, 1955. Prof C. Liebecq, 17 Place Delcour, Liege, Belgium, Secretary-General

International Congress of Comparative Pathology, Lausanne, Switzerland, May 26-31, 1955 Professor Hauduroy, 19 rue Cesar Roux, Lausanne, Switzerland, Secretary-General

International Congress of Criminology, London, England, Sept. 4-10, 1955. For information write: Dr. Carroll, 28 Weymouth St., London, W.1, England.

International Congress of Military Medicine and Pharmacy, Luxemburg, Luxemburg, Nov. 7-12, 1954 Colonel A. R. Vernengo, Direcion General de Sanidad Militar, Pozos 2045, Buenos Aires, Argentina, S. A., Secretary-General

International Congress of Plastic Surgery, Stockholm, Sweden, Aug. 1-4, 1955, and Uppsala. Sweden, Aug. 5, 1955. Dr. Tord Skoog, Uppsala, Sweden, General Secretary.

International Hospital Congress, Lucerne. Switzerland, May 30-June 3, 1955. Capt J. E Stone, International Hospital Federation, 10 Old Jewry, London, E C.2, England, Hon. Secretary.

International Surgical Congress, Geneva, Switzerland, May 23-26, 1955. Dr Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U S A., Secretary-General.

International Symposium on Cardiovascular Surgery, Henry Ford Hospital, Detroit, Michigan, U S.A., March 17-19, 1955. Dr. Conrad R. Lam, 2799 West Grand Boulevard, Detroit 2, Michigan, U.S.A., Chairman of Program Committee.

Japan Medical Congress, Kyoto University and Kyoto Prefectural Medical College, Kyoto. Japan, April 1-5, 1955. Dr. Mitsuharu Goto, University Hospital, Medical Faculty of Kyoto University, Kyoto, Japan, Secretary-General.

Latin American Congress of Physical Medicine, Lima, Peru, S. A., Feb. 14-19, 1955. Dr. Cassius Lopez de Victoria, 176 East 71st St., New York 21, N Y., U. S. A., Executive Director.

Middle East Medical Assembly, Campus of American University of Beirut, Beirut, Lebanon, April 22-24, 1955. Dr. John L. Wilson, American University of Beirut, Beirut, Lebanon, Chairman.

National Congress of Tuberculosis and Silicosis, Mexico, D.F., Mexico, Jan. 23-29, 1955. Dr. Jose Nava Gonzalez, Balderas 32-312, Ap. Postal 7267, Mexico, D.F., Mexico, Secretary General.

Neuroradiologic Symposium, London, England, Sept. 13-17, 1955. Dr. R. D. Hoare, National Hospital, Queen Square, London, W.C.1, England, Secretary.

Pan-American Academy of General Practice, Lima, Peru, S. A., Feb 11-25, 1955 Dr. Arturo Martinez, 54 East 72nd St., New York 21, N. Y., U. S. A., Secretary.

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 21-23. Sec., Dr. D. G. Gill, 537 Dexter Ave., Montgomery 4.

Arizona:* *Examination and Reciprocity* Phoenix, Jan. 12-14, 1955, and April 13-15, 1955. Ex. Sec., Mr Robert Carpenter, 401 Security Bldg., Phoenix

Arkansas * *Regular. Examination.* Little Rock, Nov. 4-5. Sec, Dr. Joe Verser, Harrisburg *Eclectic. Examination and Reciprocity.* Little Rock, Dec. 8-9. Sec., Dr. O. L. Atkinson, 2528 Central Ave., Hot Springs National Park.

California: *Written* Sacramento, Oct. 18-21. *Oral.* Los Angeles, Nov. 20. *Oral and Clinical Examination for Foreign Medical School Graduates.* Sec., Dr. Louis E. Jones, 1020 N Street, Sacramento.

Colorado:* *Examination.* Denver, Dec. 7-8. Exec. Sec., Mrs. B. H. Hudgens, 831 Republic Bldg., Denver 2.

Connecticut:* *Examination.* Hartford, Nov. 9-10. Sec, Dr. Creighton Barker, 160 St. Ronan St, New Haven *Homeopathic.* Derby, Nov. 9-10 Sec, Dr. Donald A. Davis, 38 Elizabeth St., Derby.

Delaware: *Examination and Reciprocity.* Dover, Jan. 11-13, 1955. Sec., Dr J. S. McDaniel, 229 So. State St., Dover.

District of Columbia:* *Examination.* Washington, Nov. 8-9. Deputy Director, Mr. Paul Foley, Department of Occupations and Professions, 1740 Massachusetts Ave., N.W., Washington.

Florida:* *Examination. Jacksonville, Nov. 21-22. Sec., Dr. Homer Pearson,* 901 NW 17th St, Miami 36.

Idaho: *Examination and Endorsement.* Boise, Jan. 10-12, 1955. Exec. Sec., Mr. Armand L. Bird, 364 Sonna Bldg, Boise

Iowa:* *Examination.* Des Moines, Dec. 6-8. Exec. Sec., Mr. Ronald V Saf, New State Office Bldg., Des Moines 19.

Kansas: *Examination and Reciprocity.* Topeka, Dec. 8-9. Sec., Dr. O W. Davidson, 872 New Brotherhood Bldg, Kansas City.

Kentucky: *Examination.* Louisville, Dec. 6-8. Asst. Sec., Mr. R. F. Dixon, 620 S 3rd St., Louisville.

Louisiana: *Examination and Reciprocity.* New Orleans, Dec. 2-4. Sec., Dr. Edwin H. Lawson, 930 Hibernia Bank Bldg., New Orleans 12.

Maine: *Examination and Endorsement.* Portland, Nov. 9-10. Sec., Dr. Adam P. Leighton, 192 State St, Portland.

Maryland: *Regular. Examination.* Baltimore, Dec. 14-17. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St; Baltimore 1. *Homeopathic.* Baltimore, Dec. 14. Sec, Dr. Robert H. Reddick, R.D. #2, Cambridge.

Massachusetts: *Examination* Boston, Jan. 18-21, 1955. Sec., Dr. Robert C. Cochrane, Room 37, State House, Boston.

Mississippi: *Reciprocity.* Jackson, December. Asst. Sec., Dr. R. Whitfield, Old Capitol, Jackson 113.

Nebraska:* *Examination.* Omaha, June, 1955. Director, Bureau of Examining Boards, Mr. Husted K. Watson, State Capitol Bldg, Room 1009, Lincoln 9.

New York: *Examination.* New York City, Albany, Buffalo, and Syracuse, Feb. 15-18, 1955. Sec, Dr. Stiles D. Ezell, 23 S. Pearl St., Albany 7.

North Dakota: *Examination.* Grand Forks, Jan. 5-8, 1955. *Reciprocity.* Grand Forks, Jan. 8. Sec., Dr. C. J. Glaspel, Grafton.

Ohio: *Examination.* Columbus, Dec. 13-15. *Reciprocity.* Sec., Dr. H. M. Platter, Wyandotte Bldg, Columbus 15.

South Carolina: *Examination and Reciprocity.* Columbia, Nov. 8. Sec, Mr. N. B. Heyward, 1329 Blanding St., Columbia.

Texas:* *Examination and Reciprocity.* Fort Worth, Dec. 2-4. Sec., Dr M. H. Crabb, 1714 Medical Arts Bldg, Fort Worth 2.

Utah: *Reciprocity* Salt Lake City, Nov. 16. Director, Department of Registration, Mr. Frank E. Lees, 324 State Capitol Bldg, Salt Lake City.

Virginia: *Examination.* Richmond, Dec. 9-11. *Reciprocity.* Richmond, Dec. 8. Address: Board of Medical Examiners, 631 First St., S.W., Roanoke.

Alaska.* On application. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

Guam: The Commission on Licensure will meet whenever a candidate appears or submits his credentials Sec., Dr. Benedict Cooper, Agana.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Alaska: On application Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

District of Columbia: *Examination.* Washington, Oct. 18-19. Deputy Director, Department of Occupations and Professions, Mr. Paul Foley, 1740 Massachusetts Ave., N.W., Washington.

Florida: *Examination.* Gainesville, Nov. 6. Sec., Mr. M. W. Emmel, Box 340, University of Florida, Gainesville.

Minnesota: *Examination.* Minneapolis, Jan. 4-5, 1955. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis.

Oklahoma: Oklahoma City, April 8-9, 1955. Sec, Dr. C. Gallaher, 813 Braniff Bldg, Oklahoma City.

Oregon: *Examination.* Portland, Dec. 4, 1954, and March 5, June 4, Sept. 10, and Dec. 3, 1955. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

Rhode Island: *Examination* Providence, Nov. 10 Administrator of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg, Providence.

South Dakota: *Examination.* Vermillion, Dec. 3-4. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Texas: *Examination.* Austin, Oct. 22-23. Address, Mrs. Betty Ratcliff, Chief Clerk, 407 Perry-Brooks Bldg, Austin.

Wisconsin: *Examination.* Milwaukee, Dec. 4. Sec., Mr. W. H. Barber, 621 Ransom St., Ripon.

---

*Basic Science Certificate required.

FOREIGN LETTERS

BRAZIL

Treatment of Tuberculosis.—Dr. Eduardo Etzel reported (*Rev. paulista med.* 44:353, 1954) an analysis of the results of 107 pulmonary resections performed by him for the treatment of tuberculosis. This total includes 57 pneumectomies, 41 lobectomies, and 9 segmental resections. Of the 41 lobectomies 16 involved the upper lobe of the right lung and 6 the upper lobe of the left. Between 1946 and 1953, Dr. Etzel tried the cardiorespiratory functional tests suggested by various authors to ascertain the conditions of the patients and determine the exact indication for each method of collapse therapy. His experience with a few hundred operations of several kinds lead him to conclude that the clinical estimation of the functional capacity of the patient aided by several roentgenograms is a better criterion than all the laboratory tests. Five of 27 patients in whom the sedimentation test was performed died; in these persons the sedimentation rate varied from 12 to 64 mm. per hour. In the other 22, the rate varied between 2 and 65 mm. Among the patients in whom resection gave good results, in 6 the rate varied from 40 to 65 mm. and in three from 20 to 39 mm., leading to the conclusion that a high sedimentation rate is not in itself a contraindication to resection.

Among the postoperative complications, hemorrhage is always a consequence of the slipping of a vascular ligature, resulting in an often fatal blood loss. Two of the author's patients had this complication. In one a superior lobectomy of the left side with segmental resection of the apex of the inferior lobe resulted in death a few hours after a laborious operation, at the end of which the patient was in good condition. In the other patient the hemorrhage was discovered four hours after the operation, when it was too late to reopen the thorax and tie off the bleeding vessel.

Suppuration was rare, occurring in only one patient. After a pneumectomy, pus formed in the middle of a fibrinous reaction, without bronchial fistula. Of the 107 patients on whom resection was performed a bronchial fistula developed in 12. Bronchial fistulas developed in 10 of the first 52 patients (19.2%) and in only 2 of the last 55 patients (3.6%). This difference reveals the great improvement in operative technique. Of the 12 bronchial fistulas, 6 occurred after pneumectomies and 6 in the immediate postoperative period after lobectomies. Of the six fistulas complicating pneumectomies, two occurred in the immediate postoperative period and four a month after the operation owing to infection of the bronchial suture material. This complication usually occurs between the 20th and 30th postoperative days. Of the 12 patients with fistulas, 4 died, all of them after pneumectomies, thus showing the seriousness of this complication after total resection of the lung, in contrast with those occurring after lobectomies. Atelectasis was observed in five patients but it may have occurred in a larger number, as, of the five occurrences, four were discovered only after the routine of repeated roentgenograms at short intervals was instituted. In all patients bronchoscopy was sufficient to clear the situation. Bronchogenic dissemination is a severe complication of pulmonary resection. Of the author's 107 patients only one presented bronchogenic dissemination, which led to death on the eighth postoperative day. This low rate of bronchogenic dissemination (0.9%) is attributed by the author to the ventral position adopted at operation for most patients.

There were 18 deaths in the 107 cases, or a fatality rate of 16.8%, but a great difference of rate was observed between the first 52 patients in whom there were 16 deaths (30.8%) and the last 55 in whom there were 2 deaths (3.6%). Immediate death (within 30 days) occurred in 11 of the 107 patients (10.3%). There were seven deaths 30 days after the operation (6.5%). In 57 patients in whom pneumectomies were done there were 15 deaths, and in 41 patients in whom lobectomies were done there were only 3 deaths. The immediate and late results were good. A late new focus developed in the same or the contralateral lung in 12 patients. About the same rate is observed after any treatment of pulmonary tuberculosis. The specific drugs that permitted the good results with pulmonary resection are also valuable in preventing the formation of a new focus after resection of the lung.

Vagotomy.—Dr. Arrigo Raia studied 32 patients who were subjected to vagotomy: 20 had duodenal ulcer, 5 had gastric ulcer, 4 had jejunal ulcer, and 3 had chronic gastritis with hyperchlorhydria. From the study of the curves of gastric acidity and of gastric motility after vagotomy and of the immediate and late results, Dr. Raia concluded that: 1. Vagotomy may be used in the treatment of gastroduodenal ulcer, as it does not do the patient any harm; but it should not be used routinely in the treatment of this condition. 2. Vagotomy should be performed in patients who have postgastrectomy peptic ulcer; it may be performed on some patients with duodenal and gastric ulcer, especially in young patients who are not relieved by medical treatment and in some patients who have chronic gastritis with hyperchlorhydria. 3. Vagotomy may be performed by the thoracic or the abdominal approach; the abdominal approach is preferred as it permits the exploration of the gastroduodenal lesion. 4. Whenever a vagotomy is performed a pyloroplasty or a gastroenterostomy should be performed to prevent the occurrence of delayed gastric emptying. 5. Vagotomy lowers gastric acidity; by caffein and histamine stimulation of the gastric mucosa it is observed that after neurectomy the acidity is much lower than when the nerve supply is intact. 6. After vagotomy motor disturbance of the gastrointestinal tract, chiefly of the stomach, is observed; these disturbances cause gastric emptying to be slower, and this causes great discomfort to the patient; motor disturbance of the esophagus and intestines is less frequent. 7. Diarrhea is not as frequent as gastric motor disturbance; in some patients it lasts only a short time, while in others it may persist for a year. The percentage of recurrence of the ulcer is higher after vagotomy than after gastrectomy, and the sequelae are as frequent after vagotomy as after gastrectomy. Dr. Raia prefers gastrectomy to vagotomy for patients who need treatment.

Neoplasms from the Medulloblast.—Dr. Paulo Queiroz Teles Tibiriçá of São Paulo and Dr. P. F. L. Becker of Porto Alegre pointed out before the International Congress of Cancer, held in São Paulo, that the spongioneuroblastoma and the glioneuroma are formed by the growth of medulloblasts that differentiate in both neuroblastic and spongioblastic series during their growth. This viewpoint is based on the fact that the medulloblast can differentiate on both series, and this viewpoint is more natural than that sustained by Globus admitting that cells already differentiated in both neuroblastic and spongioblastic series acquired neoplastic growth. The following tumors arise from the medulloblast: (1) medulloblastomas in which there is no or almost no ripening of the cells; (2) spongioneuroblastomas in which, although almost all medulloblasts differentiate in both series, there is little ripening of the cells; (3) glioneuromas in which almost all medulloblasts differentiate in both series, reaching a state of more advance ripening; and (4) ganglioneuromas that possibly represent the ripening of glioneuromas. Drs. Tibiriçá and Becker have many doubts about this point because the glial cells appearing in the ganglioneuromas cannot be neoplastic, as they show almost full ripening. There is an important gap between the medulloblastoma and the spongioneuroblastoma, but it is known that there are medulloblastomas in which some cells are in process of differentiation to both neuroblastic and spongioblastic cells.

Gallstone Ileus.—Dr. Paulo A. de Freitas and his co-workers reported (*Rev. Hosp. clin.* 9:304, 1954) three patients with gallstone ileus and made a study of them together with 15 others previously reported in the Brazilian medical literature between

---

The items in these letters are contributed by regular correspondents in the various foreign countries.

1920 and 1952. The three patients reported were taken from a series of 1,726 patients with diseases of the gallbladder and the biliary ducts and 521 patients with intestinal obstruction. Of the 18 patients reported in the Brazilian literature 14 were women. In the 16 patients whose age was known the range was 26 to 69 years; 18.7% were less than 50 years old, 43.7% were between 50 and 59, 37.6% were between 60 and 69. The intestinal obstruction is caused in most patients by the passage of gallstones into the intestines through a fistula, the most common of which is the cholecystoduodenal type. In seven of the eight patients in whom the vesicular region was explored such a fistula was found. For diagnosis it is important to know of any previous complaints that might have been due to gallstones. In 16 of the 18 patients there was a previous history of cholecystopathy. In nine patients a roentgenologic examination was performed. This established an exact diagnosis of gallstone ileus in six. Of the 18 patients one died soon after hospitalization, and all the remaining 17 were treated by enterotomy and removal of the stones. Three deaths occurred among the 17 who were operated on. There were no deaths among Dr. de Freitas' three patients.

ENGLAND

Factory Accidents.—The report of the Chief Inspector of Factories for 1952 reveals that in that year the number of fatal accidents (792) and of nonfatal (176,718) accidents in factories was the lowest recorded since passage of the Factories Act of 1937. This represents a reduction of 25% in the accident rate—from 30 per 1,000 employed persons in 1937 to 22.5 in 1952. The only two groups to show an increase were those due to railways and to other vehicles. Accidents due to sepsis were less than one-half of those in 1937. In 1952, 28,045 accidents, or about one in six, involved injury to the feet. Two-thirds of these might have been prevented by the use of safety footwear. The chief inspector stated that "all too frequently last year's Sunday best shoes are thought adequate for wearing out in the factory. This is the height of stupidity."

During the year there were 8,605 accidents to boys and 3,158 to girls: the comparable figures for 1937 were 26,451 and 8,906. The chief inspector warned that "managements must take as axiomatic that all workers, and young persons more often than others, are liable to do foolish things." There was no evidence to show that older people were more accident prone than workers in the prime of life; there were 12,832 accidents to persons aged 60 years and over, slightly over 95% being to men. The figures for men seemed to indicate that the tendency to change to lighter and less hazardous work does not as a rule become pronounced until after 65. Accidents involving less acute faculties, slower reaction to the sudden approach of a vehicle, or something falling off a bench occurred at the same or a slightly higher rate in older than in younger persons. Although the accident rates generally for older persons were appreciably less than those for other groups, in 1952 accidents to those aged 60 and over were 7% greater than in 1951. Despite divergences of statistics, however, it was evident that older persons were staying at work in large numbers and that they were doing so at rather less risk to themselves than at any other period of their working lives.

There were 265 cases of gassing during the year, including 108 due to carbon monoxide, 27 to chlorine, and 24 to trichlorethylene. This is the highest number since 1945. There were 468 cases of industrial poisoning or disease, including seven deaths, compared with 494 cases and six deaths in 1951. Chrome ulceration (217 cases) and epitheliomatous ulceration or skin cancer (157 cases, 2 fatal) headed the list. There were 48 cases of lead poisoning, none fatal. Twenty cases of anthrax, with one death, were reported, as compared with 31 cases and one death in 1951. There were 1,905 deaths from fibrosis of the lung, including silicosis, asbestosis, pneumoconiosis, and byssinosis; 2,037 in 1951. The total number of voluntary reports of dermatitis was 3,122 (3,281 in 1951). Cleanliness was often below standard, particularly in smaller factories. The chief inspector comments: "The same British public that covers the parks and beaches with litter and broken bottles at holiday times treats the floors and benches of its workplaces in the same way while at work and brings the same lack of interest to any attempt to cleaning up."

Diphtheria Reimmunization in Young Adults.—In a series of 650 student nurses investigated by Mollie Barr and A. C. Cunliffe (*Month. Bull. Min. Health* 13:98, 1954) 76 of the 650 studied had had no inoculation against diphtheria and had not had diphtheria, and 527 had had inoculations in childhood and had never had diphtheria. Of the first group, 44 (57.9%) had diphtheria antitoxin titers below 0.01 unit per milliliter, and 40 (52.6%) had titers below 0.001 unit per milliliter. Of the second group, 262 (49.7%) had titers below 0.01 unit per milliliter, and 129 (24.5%) had titers below 0.001 unit per milliliter. Booster doses of 0.2 and 0.5 ml. of either alum-precipitated toxoid (A.P.T.) or purified Formol toxoid (F.T.) were given intramuscularly or subcutaneously to those who had a history of previous inoculation and whose antitoxin titers were below 0.01 unit per milliliter. As judged by the antitoxin titers 14 days and 20 months after the booster dose, there was no difference in the efficiency of these two prophylactic agents at either level of dosage. Subjective reactions to Formol toxoid were negligible, but moderate or severe local reactions occurred in 16 of 33 nurses given 0.5 ml. of alum-precipitated toxoid. It is concluded that a small dose (0.2 ml.) of Formol toxoid is satisfactory for reinforcing immunity in adults and that a low reaction rate can be expected if steps are taken to exclude subjects who are hypersensitive to diphtheria prophylactics. The results of this survey show that, if circulating antitoxin is to be maintained at a high level, many young adults who were artificially immunized as children should receive a booster dose of diphtheria toxoid.

The Retreat, York.—The annual report for the year 1953 of The Retreat, a well-known mental hospital founded by William Tuke, a Yorkshire Quaker, in 1796, and the first hospital in England in which mental disorders were regarded as illnesses requiring sympathy and scientific treatment, shows that the proportion of senile dementia is still high. There has also been an increase in the number of patients with schizophrenia and psychoneuroses, especially those associated with addiction to alcohol or drugs. On the other hand, acutely disturbed patients with mania have been much less in evidence, and no patient with general paresis was admitted during the year. The clinical director reports that none of the cerebral operations so far tried for the treatment of schizophrenia have produced promising results. Those first introduced, unless drastic, seem to effect negligible improvement or improvement that lasts for a negligible time. If drastic, the operation often produces other unsought-for and often unexpected results that may leave the patient's last state worse than his first. In patients in whom the disease has resisted all conservative methods, the operation is sometimes successfully performed after careful assessment to attain certain limited objectives. It is not the treatment of choice in a case that has recently become acute. At The Retreat, no schizophrenic patient was operated on during the year. Insulin shock therapy, despite its limitations, will be used on these patients until something better is found.

Selling of Medical Practices.—The right to buy and sell goodwill was lost on the introduction of the National Health Service. The Amending Acts Committee of the Council of the British Medical Association has prepared a practical plan for restoring this right. Such a restoration would increase the physician's incentive to give of his best to his patients; it would ensure that the successor to a practice was there to receive an appropriate introduction to it and so maintain continuity of treatment, whereas at present there is a gap of about three months between the leaving of a physician and the later appearance of his successor; and it would increase the ease with which physicians could move from one practice to another. Such moves are extremely difficult at present. A young physician would have the choice of buying a practice where one was available, instead of having to queue up for vacancy after vacancy and eventually obtain a practice in an area to which, otherwise, he would not have gone. The principal in a practice would have the right, and not just the privilege, of choosing his partner or successor by personal and mutual agreement. Facilities would be offered to hospital residents who, not being required in hospital practice, would find an opportunity of going into general practice. Under the present system there is a reluctance to appoint men from hospitals to private practice. By a vote of 135 to 124, however, the association judged the plan impracticable.

Association of Pediatric Surgeons.—The inaugural meeting of the British Association of Pediatric Surgeons was held June 30 to July 2 under the presidency of Mr. Denis Browne, who said that the aim of the association was not to try to develop a monopoly but to set a standard in the surgical care of children. Many of the 110 delegates came from abroad. During the meeting, Dr. Orvar Swenson, Boston, Mass., delivered the Simpson-Smith memorial lecture of the Institute of Child Health on congenital defects of the pelvic parasympathetic nervous system. Miss Isabella Forhsall, Liverpool, discussed the cardioesophageal syndrome, which is an important cause of persistent vomiting in infancy and includes two conditions: lax esophagus, in which the cardia is below the diaphragm, and hiatus hernia, in which it lies above the diaphragm. The former rarely requires operation, but in the latter reflux esophagitis is common and secondary shortening and stricture of the esophagus are real dangers. Operative repair of the hernia is always necessary. During the discussion, Mr. Ronald Belsey, Bristol, drew attention to the rapidity with which stricture formation can occur and stressed the necessity for esophagoscopy whenever esophagitis is suspected. He had had to perform resection in 20 children with advanced strictures.

Tuberculous Students.—In September, 1952, the British Student Tuberculosis Foundation established an experimental student rehabilitation unit at Pinewood sanatorium in the south of England. The aim of the unit was to provide skilled medical supervision for tuberculous students during their period of convalescence and to combine this with supervision of their academic studies. To date, 43 students have passed through the unit, 16 are in residence, and 8 are ready to go there as soon as vacancies occur. Academic arrangements are supervised by an academic subcommittee under the chairmanship of a senior lecturer in the University of London, and tutorial help is obtained from the neighboring University of Reading as well as from the University of London. All the students can be registered as postal borrowers of the University of London library. While the student remains convalescent, it is impossible for him to cover the entire curriculum, but after months of inactivity in a sanatorium a resumption of his studies makes him feel that he is progressing, and that is the *sine qua non* of rehabilitation.

Certificitis.—An interesting example of the extent to which the country is riddled with "certificitis" was cited at the annual meeting of the British Medical Association by a general practitioner in the Durham coalfield. Coal miners in this country are paid on the basis of five shifts' work plus one shift bonus: i. e., six shifts' pay for five shifts worked. If one shift is missed, the miner is only paid for four shifts and so loses one-third of his week's wages. If, however, he gets a physician's certificate covering the missed shift, he redresses the financial loss to some extent. The Durham general practitioner reported that twice within a month he had seen miners who had asked him for certificates because they had overslept. On another occasion a miner had asked for a certificate because he had been to his brother-in-law's funeral.

Mortality Figures.—Figures published by the Registrar General show that during 1953 there were 320 deaths from acute poliomyelitis, compared with 275 in 1952 and 191 in 1951. The highest recorded figure was 734 in 1950. There were only 345 deaths from tuberculous meningitis, compared with 511 in 1952 and 882 in 1951. There were 23 deaths from diphtheria, compared with 32 in 1952 and 33 in 1951. Deaths from duodenal and gastric ulcer were down to 5,126, compared with 5,384 in 1952 and 5,630 in 1951. A decline also occurred in deaths from appendicitis; 906, compared with 1,045 in 1952 and 1,172 in 1951. There were 932 deaths from accidental poisoning (843 in 1952, 820 in 1951), 703 due to accidental burns (831 in 1952, 888 in 1951), and 4,754 deaths by suicide (4,338 in 1952, 4,469 in 1951).

Manson Memorial.—To commemorate the birth of Sir Patrick Manson, often referred to as the father of tropical medicine, the London School of Tropical Medicine has placed a memorial plaque on the wall of the garden of Cromlethill, the house in Old Meldrum, Aberdeenshire, where he was born on Oct. 3, 1844. Sir Patrick founded the school in 1899. The plaque was unveiled on July 7 by Sir Patrick's nephew, Sir Alan McLean.

Silver Jubilee.—The Royal College of Obstetricians and Gynecologists is celebrating its silver jubilee this year. To mark the occasion, Sir William Fletcher Shaw, the first honorary secretary of the college and its president from 1938 to 1943, has written a history of the college. The celebrations have included the conferment of honorary fellowships on, among others, Dr. Joe Meigs of Boston.

MEXICO

Diabetes and Tuberculosis.—The National Institute of Pneumology met in June in Mexico City. Among those present from the United States were Drs. Charles B. Allen, Oscar Auerbach, Andre Conrand, Maxwell Chamberlain, Norman J. Wilson, and Howard T. Barkley. Drs. José de Jesús Macías and Rafael Rodríquez discussed the relation between diabetes and tuberculosis. Of 2,018 diabetic patients observed in the Hospital de Enfermedades de la Nutricion between 1947 and 1954, 31 had pulmonary tuberculosis. The percentage of diabetic patients with tubercular complications in this series is less than that found by other observers. This is strange in view of the high incidence of pulmonary tuberculosis in Mexico. This can perhaps be explained by the fact that most of the diabetic patients in this study were over 40 years old and that there is a greater number of patients who require less than 40 units of insulin daily for control. The speakers pointed out that in foreign statistics tuberculosis is found more often in diabetic patients less than 40 years old and that it is twice as frequent in persons with severe diabetes who require large doses of insulin.

The tubercle bacillus develops rapidly in patients with poorly controlled diabetes who have episodes of diabetic coma and acidosis. The hypothesis that adrenal cortical activity may interfere with immunity to tuberculosis by causing profound metabolic alterations was offered. The early diagnosis of pulmonary tuberculosis is difficult, at best, owing to the lack of symptoms. This difficulty is increased in the diabetic patient because the manifestations of the infectious process are hidden by the diabetes, especially in patients in whom the metabolic imbalance is severe. Because the pulmonary involvement is appreciated usually only after a roentgenogram of the chest, it was recommended that all patients with diabetes should have x-ray examinations periodically.

In these patients the speakers found that exudative lesions predominated, that unilateral localization was more frequent, that there was cavity formation in more than 50% of the patients, that in two-thirds of the patients the process was active, and that in most patients the lesions were advanced. In tuberculous diabetics there is a marked loss of weight and an increase in insulin requirements. Paradoxically the diabetes improves as the pulmonary lesions advance. Although diabetes is more frequent in women than in men, pulmonary tuberculosis was more frequently associated with diabetes in men. According to the literature the presence of active tuberculous lesions is more frequent in young patients who have had diabetes for more than 10 years and who require large doses of insulin, but in the present series diabetes occurred more often in adults than in children (87.7% were over 40 years old). Of 31 diabetics with tuberculosis, 20 were more than 40 years old, and in 21 of the patients the tuberculosis appeared before the diabetes had been present for 10 or more years. The authors believe this is due to the lack of satisfactory control of diabetes and that, under these circumstances, the resistance to tuberculosis is decreased. In fact, in 28 of the 31 patients the control of diabetes before the appearance of tuberculosis was unsatisfactory, and in the remaining 3 the already existing diabetes was not suspected.

CORRESPONDENCE

EFFECT OF CIGARETTE SMOKE ON LUNG TUMORS OF LABORATORY ANIMALS

To the Editor:—I had the opportunity at the recent American Medical Association meeting in San Francisco to see the exhibit of Dr. Russell W. Weller of Philadelphia, and I would like to make a few comments. The title of his exhibit was "Lifetime Cigarette Smoke Exposure in a Colony of C-57 Black Mice."

Four years ago, after finishing an experiment on cancer with A/Jax mice, I chose C-57 mice for my next study because these mice were known as "cancer-resistant." Forty experimental and 40 control mice were placed in my automatic smoking machine for intended exposure to the smoke for 14 months. The capacity of the smoking chamber of this machine is 2 cu. ft. (0.057 cu. m.); it smokes 12 cigarettes daily (one per hour) except Sundays. The smoke reaches the mice immediately and directly without loss of condensing tar. Fresh air circulates through the smoking chamber all the time. The results: all of my experimental mice were dead before the year was over. Microscopic examination of the lungs revealed that all of them had died from pneumonia. Three of the experimental mice had small tumors in their lungs. At first I was perplexed by these results, but later study demonstrated that Mouse C-57 is far more susceptible to pneumonia than A/Jax Mouse is to tumors. It is doubtful if Mouse C-57 can be used for cancer of the lung experiments.

For the last 14 years I have endeavored to elicit the significance of effects of nicotine and cigarette smoke on mammalian organs, particularly the lung. During this study, a number of rules have been discovered without which dependable results cannot be obtained. It has been found that the dosage of smoke or the nicotine solution and the time of exposure are the cardinal points in this kind of work. The dosage must not be less than that consumed by a heavy human smoker. Also, the time must be approximated to human smoking. If the dosage is much under par, the time of exposure has little or no significance. The smoke must reach the animals immediately and directly, for otherwise a large portion of the carcinogenic agents is deposited on transit structures. The smoke must enter the cage at the animal level and not above, and it must linger on the animals at least for 8 to 10 minutes before it is pumped out of the cage. A number of investigators have ignored, partly or completely, the accepted methods of procedure. If the rules of dosage and tar deposit are violated, the results of such studies are erroneous and misleading.

J. M. Essenberg, Ph.D.
Department of Anatomy
Chicago Medical School
Chicago 12.

DOCTOR DRAFT

To the Editor:—As noted in the item "Doctor Draft" in The Journal, July 24, 1954, advertising page 14, the concern of the National Advisory Committee to Selective Service for priority 3 physicians who are over the age of 31 is something I find extremely difficult to understand and appreciate. We priority 2 physicians were deferred in World War II to complete our medical education. We then served on active duty in the military services for as long as the services wanted us. A person who is on active duty in the Army or the Navy has little if anything to say about how long he serves and when his service is terminated. Such matters are decided by his superior officers. Yet we have been treated as though we individually determined the length of our military tour of duty and when we would be discharged. It was quite agreeable to both Congress and the National Advisory Committee to Selective Service to disrupt priority 2 physicians over the age of 31 by forcing them to accept a second tour of military duty.

Priority 3 physicians were deferred from military duty in World War II only for reasons different from ours—not for better or more valid reasons. Most of them were able to advance themselves professionally and economically at the expense of their colleagues who did serve at that time, just as they are now doing for a second time. Under the circumstances, it seemed quite unfair to have them follow us into the military services, according to the law that was passed by Congress. Now we learn that those in priority 3 who are over 31 are being protected from ever having to serve in uniform. This compounds the inequity of the situation. It is unfair not only to those of us in priority 2 who are over 31 and have served or are serving but also to those in priority 4 who put in 21 months or more of duty in World War II and the Korean War, when such duty carried far more hazards than now. It is also unfair to priority 3 physicians who are less than 31 years old.

The reason that is given for such preferential treatment of this group by the National Advisory Committee is that "many of the older group are in well-established practices and are more essential to hospitals and medical schools." Many of us in priority 2 who are over 31 (I am 37) were forced to abandon well-established practices as well as hospitals and medical schools in which we were donating our time. It is extremely difficult to see why a priority 3 physician who is in the same general age group as a priority 2 physician should be regarded as being more essential to his practice, hospital, or medical school than his priority 2 contemporary. Is it because the priority 3 physician has had more experience in civilian medicine? I am not questioning the patriotism of the priority 3 physicians who are over the age of 31. Their motivations and patriotism are no different from those of any other group of American physicians. In most instances, the individual members of this group had little to say as to whether or not they served in World War II. It is the current policy regarding these physicians that I am attacking; I have no dispute with the physicians themselves.

I protest this inequity. I think that it is about time for priority 3 physicians who are over the age of 31 to join their colleagues in uniform—who are in priority 2 and are also over the age of 31.

Capt. C. Maynard Guest, MC
Rodriquez Army Hospital
APO 851, % Postmaster
New York.

d-TUBOCURARINE IN PROCTOLOGIC SURGERY

To the Editor:—Since the conclusions of our clinical evaluation of Tubadil (each cubic centimeter contains 25 mg. of *d*-tubocurarine chloride pentahydrate, 312 mg. of oxycholesterol derivatives, 20 mg. of white wax, 5 mg. of chlorobutanol anhydrase, and 562 mg. of deproteinized peanut oil) are not in agreement with those reported by Malia and others in The Journal for Sept. 4, 1954, page 7, we are reluctantly writing this letter. We studied only 11 patients (Turell, R.: *Surgery* 35:243, 1954) because, as the results began to reveal themselves, the continuation of this clinical experiment could not be justified. Seven of the 11 patients who received *d*-tubocurarine (1 cc. intramuscularly at the commencement of hemorrhoidectomy) required one or two doses of either morphine or meperidine (Demerol) for the relief of pain. Two of the four patients who did not require narcotics had some general muscular relaxation but without respiratory embarrassment. Another patient (the 11th of this series) could not talk for almost 10 hours, appeared flaccid, and had sufficient difficulty in breathing so as to alert the anesthesiologist for fear that artificial respiration might become necessary. Of the 11 alternate controls, 3 did not require narcotic drugs for the relief of postoperative pain and the remaining 8 required one or two doses of narcotic drugs. It was therefore concluded that "repository injection of *d*-tubocurarine does not appear to control posthemorrhoidectomy pain. The generalized muscular relaxation observed in three cases, which was alarmingly pronounced in one, constitutes potential respiratory danger." This calculated risk could not be justified for the control of pain that, at worst, could be controlled with two or three injections of a narcotic drug.

Some of Malia and co-authors' observations and data seem to support our conclusions rather than their own. Table 2 in their article shows that the average number of doses of narcotics during the first postoperative day, which is the most crucial one, was 2.1 for the control and 1.9 for the treated patients, or, practically speaking, the same. Furthermore, "lessening of narcotic demand after the second postoperative day," as claimed by them, is a common observation after almost all anorectal operations without the help of special therapeutic agents. They rightly warned that since "patients receiving Tubadil usually have some impairment of muscle control, they should be assisted when out of bed to avoid injuries due to fall," thus creating new hazards, adding problems to the already overburdened and critically short trained nursing personnel, and, most importantly, interfering with early ambulation of the patient. These disadvantages appear to outweigh the alleged advantages.

As is the case with Efocaine, we have observed almost no difference in the postoperative pain experienced by control patients and patients who have received Tubadil after undergoing the open type of hemorrhoidectomy, as in the St. Marks (London) Hospital procedure or any modification thereof. In addition, troublesome side-effects, dangerous in some instances, have been noted as a result of these drugs. In an extensive experience (Turell, R.: Treatment in Proctology, Baltimore, Williams & Wilkins Company, 1949; *S. Clin. North America* **32**:677, 1952) with this problem we found that the amount of postoperative pain depends more on the type of hemorrhoidectomy (or any other anorectal operation) performed and on the gentleness in handling tissues during operation than on the use or nonuse of potentially dangerous drugs. As already stated, the postoperative pain (the threshold of which is variable among patients) after these operations, at worst, can be controlled easily with two or three injections of narcotic drugs such as morphine or levorphan (Levo-Dromoran). At best, Tubadil (or Efocaine) is only a therapeutic crutch fostering a false sense of security and dependence on a drug; it is an extremely poor substitute for good and gentle surgery.

Robert Turell, M.D.
25 E. 83rd St., New York 28.
Milton H. Adelman, M.D.
430 E. 63rd St., New York 21.

POLIOMYELITIS

To the Editor:—Dr. O'Brien and his co-workers in their article on poliomyelitis in The Journal for Sept. 4, 1954, page 27, discuss their experience with transportation of patients over long distances. They state that it is not uncommon for them to receive patients several hundred air miles from Reno and feel that no patient suffered from such travel. This differs from our analysis (Brahdy, M. B., and Katz, S. H.: *J. A. M. A.* **145**:772 [June 30] 1951) of 113 transported patients admitted to Willard Parker Hospital in New York in 1949. We concluded that transportation over long distances was harmful. As pointed out in Dr. O'Brien's article, the difference is probably one of geography. In rural areas, where transport is by air, the effect on the patient may be less harmful than in urban and suburban areas, where transport is overland. Especially in the latter, we strongly urge hospitalization in the nearest facility adequately equipped for the care of poliomyelitis patients.

M. Bernard Brahdy, M.D.
445 Gramatan Ave.
Mount Vernon, N. Y.

POLIOMYELITIS AND TONSILLECTOMIES

To the Editor:—Regarding the editorial (*J. A. M. A.* **154**:1180-1181 [April 3] 1954) supporting the thesis that tonsillectomy increases the incidence of bulbar poliomyelitis, which compares persons who have had presumably abnormal tonsils removed with persons who have had presumably normal tonsils left in: to avoid the obvious, that sick persons get sick more often than well persons, one should compare those who have had abnormal tonsils removed with those who have had abnormal tonsils left in.

Robert E. Molenaar, M.D.
Cannon Falls, Minn.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

THE KOREAN G. I. BILL

The information given below on the "Korean G. I. Bill" was received too late for inclusion in the annual Education Number of The Journal *Sept. 11, 1954. Because of its importance to veterans who served in the armed forces after June 27, 1950, it is presented at this time.*

Veterans are eligible for education and training under the Korean G. I. bill if they served in the armed forces after June 27, 1950, had at least 90 days' total service, and were separated under conditions other than dishonorable. The 90 day requirement is waived for veterans discharged because of an actual service-incurred injury or disability. A veteran is entitled to training for one and one-half times the length of the period he spent on active service after June 27, 1950. The maximum is 36 months of training.

Korean G. I. bill students receive a single allowance check each month from the government. With the help of this money, they must meet all their own expenses of training, such as tuition, fees, books, and supplies. Rates for veterans in school full time are $110 a month, without dependents; $135 with one dependent; and $160 with more than one dependent.

When a veteran applies for training, he must specify the objective he intends to reach and the training program he plans to take that will lead him to his objective. Under the law, a veteran may change his program of training no more than once. Also, the law prohibits him from training for an objective for which he already is qualified by reason of prior training or experience. The matter of stating a proper objective is of utmost importance to all veteran-trainees, including those training in the field of medicine. For a premedical student, the objective would be the profession he is aiming for: physician (M.D.). For a veteran taking his medical internship, the objective also would be physician (M.D.); however, if his total course is for a specific specialty, that specialty becomes his objective: pediatrician, surgeon, and so on. For a veteran taking a residency course leading to certification by a specialty board, the objective would be that specialty for which the board has established standards; examples would be orthopedic surgeon, pathologist, and specialist in physical medicine and rehabilitation. The veteran planning residency training in a field in which specialty board requirements have not been published should inquire at his VA regional office about (1) proper objective to put down and (2) special requirements the residency course must meet.

One item of importance to all Korean G. I. bill veteran-trainees is the monthly G. I. education and training allowance. Premedical students going to school full time obviously will be paid the full-time classroom rate, ranging from $110 to $160 a month, depending on dependency status. G. I. interns and residents also will receive the rates paid to classroom students. To be acceptable under the Korean G. I. bill, and therefore to qualify for the full-term training pay, a medical internship course must be accredited and approved by the A. M. A.'s Council on Medical Education and Hospitals, for whatever length the Council has approved for the particular internship course at the particular hospital. No G. I. allowance may be paid to veterans taking nonapproved internships, since nonapproved courses would not be recognized as qualifying a veteran for the practice of the profession.

A medical residency course must meet the following three requirements in order for veterans to draw classroom pay: 1. It must be accredited and approved by the Council on Medical Education and Hospitals of the A. M. A. as a standard residency. 2. It must lead to a certification in accordance with Council standards. 3. The length of the course may not be longer than that prescribed by the specialty board or by the A. M. A. Council. G. I. allowances may not be paid to veterans enrolled in residencies that do not meet the three requirements. Veterans may obtain information about any phase of medical training under the Korean G. I. bill from their nearest VA office.

GOVERNMENT SERVICES

ARMY

Commemoration of Birthday of General Gorgas.—Major Gen. Silas B. Hays, the Deputy Surgeon General, on Oct. 1 delivered an address at Mobile, Ala., as part of the civic celebration held there commemorating the 100th anniversary of the birth of William Crawford Gorgas, an Army medical officer who in 1901 rid the city of Havana, Cuba, of yellow fever after another Army medical officer, Major Walter Reed, had shown that a species of mosquito was the vector of the disease. Gorgas as a colonel instituted preventive medical practices on the Isthmus of Panama that made possible the construction of the Panama Canal and as a major general and Surgeon General directed the Army's health program in World War I. He was born at Toulminville, near Mobile, Ala., on Oct. 3, 1854.

VETERANS ADMINISTRATION

Survey of Veterans Trained Under Public Law 16.—A Veterans Administration survey was made to learn what happened to World War II disabled veterans after they finished or stopped training under Public Law 16 and started making their own living. The survey covered a representative sample of disabled World War II veterans throughout the nation who had received Public Law 16 training at some time after the law went into effect in 1943. These veterans, many of them amputees, blinded or with weakened hearts and other serious disabilities, have more than doubled their prewar incomes, so that now they are earning $400 a year above the national average. Ninety-five out of every 100 of the rehabilitated veterans are employed, and nearly all are using skills they learned while in training. After military service and Public Law 16 training, the weekly pay averaged $72 for those who had reached the stage of complete rehabilitation. The weekly average for those who had discontinued training before completing their courses was $66.

The VA report states, as of Oct. 8, that the trained disabled veteran not only has overcome his handicap but has boosted his earning capacity above the national level. Of the employed veterans, 87% reported they were using skills acquired through Public Law 16 training. At the time they started training, their average age of the men was 27.7 years. The median prewar schooling of the veterans was 11.6 years. Twenty-six per cent had never gone beyond grade school; 60% attended high school, and 14% had gone to college. Forty-one per cent of the veterans had orthopedic disabilities, such as arm or leg amputations; 24% had recovered from nervous or mental illnesses; 7% had circulatory and heart conditions; 8% had tuberculosis or other respiratory ailments; the rest had a variety of other service-connected ailments.

The average disabled veteran received 21.3 months of training under Public Law 16. Twenty-four per cent took their training at college; another 24% attended schools below the college level; 41% trained on-the-job, and 11% took their training on-the-farm. More than 602,000 disabled veterans had received training under the program since it began 11 years ago. VA records reveal that two-thirds officially were declared rehabilitated through training, although many of the others are doing work in which the skills acquired through training are used. Among some of the trainees with the highest rates of rehabilitation were electrotypers and stereotypers, with 83%; telephone and telegraph servicemen, 80%; photoengravers, 79%; industrial engineers, 78%; optometrists, 76%; physicians and surgeons, 76%; and dentists 73%.

Changes in Hospital Managers.—Dr. Ralph S. Metheny, present manager of the VA hospital in Syracuse, N. Y., has been named manager of the VA hospital in Albany, N. Y., succeeding Dr. William W. Fellows, whose transfer as manager of the VA research hospital in Chicago was announced in August. Dr. George O. Pratt, present manager of the VA hospital in Brooklyn, N. Y., will succeed Dr. Metheny as manager of the Syracuse hospital. Dr. Alexander W. Kruger, present manager of the VA hospital at Manchester, N. H., has been named to succeed Dr. Pratt at Brooklyn. Dr. Endre K. Brunner, chief of professional service at the Boston VA hospital has been promoted to manager of the Manchester hospital, succeeding Dr. Kruger.

Hospital News.—Dr. Harold Kelman, president, American Institute for Psychoanalysis, addressed the staff of the Veterans Administration Hospital at Northport, N. Y., on Oct. 4. His topic was "Prognosis in Psychosis."

PUBLIC HEALTH SERVICE

Effect of Weight at Birth on Survival of Infants.—A detailed study of birth and death records of babies born in the United States between Jan. 1 and March 31, 1950, indicates that an infant's chance of survival during the neonatal period depends to a large extent on its birth weight and period of gestation. The study, just released by the National Office of Vital Statistics, shows that the neonatal mortality rate among infants weighing 2,500 gm. or less at birth was 173.7 per 1,000 compared with 7.8 per 1,000 among all other children. The optimum weight for survival was between 7 lb. 12 oz. (3.5 kg.) and 8 lb. 13 oz. (4 kg.). Beyond this point increases in weight proved to be a liability and the mortality risk increased.

At all weight levels except the very high the mortality risk was greater for males than for females. The over-all mortality rate for males was 22.7 per 1,000 live births, compared with 17.1 for females. At weights below 2,500 gm. nonwhite babies had a somewhat better chance for survival than white. However, in the higher weights, in which the largest number of births occurred, the mortality risk was greater for nonwhites. While only 7.4% of the babies in the study weighed less than 2,500 gm., this group accounted for two-thirds of the neonatal deaths. The largest proportion of the babies born in the survey period were in the weight group 3,001 to 3,500 gm. Only 2.1% were in the upper weight interval (4,501 gm. or more). Females on the average weighed less than males, and nonwhite babies weighed on the average 50 gm. less than white babies.

The Number of Nurses.—Nearly 400,000 nurses, an increase of 16,000 since 1950, are now working in the United States, according to new figures announced by Surgeon General Scheele of the Public Health Service. Estimates based on the latest available figures from the 48 states and District of Columbia show a total of 389,600 professional nurses in active practice in the nation. However, the demand for nursing services is so great, Dr. Scheele said, that the present recruitment goal for the nation as a whole is 55,000 student nurses a year. The number of hospital nurses, the largest single group, has increased by 15% in the last four years to a total of 231,000. Private duty nurses, the next largest group, number 74,000. The 35,200 nurses working in physicians' offices; 25,300 public health nurses; 14,000 industrial nurses; and the 8,200 nurse educators in schools of nursing make up the remainder of the total, along with 1,900 nurses in a variety of other fields. The ratio of all nursing personnel, including student nurses in general hospitals, has risen from 69 per 100 patients to 74 per 100 patients since 1950, making it the highest in history.

Clinical Director of Cancer Institute Appointed.—The Surgeon General has announced the appointment of Dr. Charles G. Zubrod, associate professor of medicine and director of research in the department of medicine, St. Louis University School of Medicine, as clinical director of the National Cancer Institute. In this position Dr. Zubrod will have a major share of the responsibility for the clinical investigations of the institute. He was born in New York in 1914, served during World War II as a medical officer, and took part in the research that developed drugs for the successful treatment of malaria. Formerly he was assistant professor of medicine and pharmacology at Johns Hopkins University Medical School, Baltimore.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Ankylosing Spondylitis and Prolonged ACTH Therapy. H. F. West and G. R. Newns. *Ann. Rheumat. Dis.* 13:109-119 (June) 1954 [London, England].

West and Newns feel that the majority of patients with ankylosing spondylitis can be treated satisfactorily with acetylsalicylic acid (aspirin), phenylbutazone, and deep x-ray therapy, but severe cases derive only temporary relief from these measures. Six patients were treated with corticotropin (ACTH) for from 18 months to two years. They were selected for this treatment because they seemed most likely to run a difficult course, yet in five of the six patients the disease, as judged by physical signs and roentgenographic appearances, has not advanced, and only the first patient is not able to work. With regard to whether long-continued adrenocortical stimulation has a place in the treatment of ankylosing spondylitis the authors are of the opinion that in really severe cases, which receive little benefit from deep x-ray therapy, prolonged adrenal stimulation is justified, but it should not be raised to a higher level, nor maintained for a longer period than is absolutely necessary. For the less severe cases it should be withheld pending the results of controlled therapeutic trials. This disease is sufficiently different from rheumatoid arthritis to justify a therapeutic trial separate from adrenal stimulation, hydrocortisone, and deep x-ray therapy, plus in each case an agreed schedule of analgesics. Although many authorities speak of corticotropin therapy as "simply suppressive," the authors question this, because two complications, both due to adrenal stimulation, were encountered: hypertension and altered adrenal function. A moderate "antirheumatic" effect can be maintained without hypertension, but when a greater effect is needed hypertension supervenes. A simple restriction of salt intake did not affect the hypertension. Evidence of adrenal dysfunction was seen in at least one patient. Complications that may or may not be the direct result of this therapy include gastrointestinal hemorrhage and intercurrent infection. One patient had an intestinal hemorrhage and another one had two separate virus infections during the time of excessive adrenal stimulation: a paralysis of the facial nerve due to pressure (Bell's palsy) with vesicles in the ear, and herpes zoster affecting the fifth nerve, on opposite sides. The authors feel that unless the 17-ketosteroids and the 17-ketogenic steroids are estimated, the adrenal stimulus cannot be properly assessed. Their practice is to assay a 24 hour specimen weekly until a maintenance level has been found and then to make a monthly test.

Arteritis of Rheumatoid Arthritis. B. Cruickshank. *Ann. Rheumat. Dis.* 13:136-146 (June) 1954 [London, England].

Cruickshank made a search for vascular lesions in the heart and in other organs and tissues in 72 fatal cases of rheumatoid arthritis. Arteritis, or evidence of previous arteritis, was found in 18 of the 72 patients with rheumatoid arthritis coming to autopsy. These patients were divided into two groups according to whether evidence of rheumatic heart disease was present. The lesions accepted as indicating rheumatic heart disease were myocardial Aschoff bodies, active or healed valvulitis, and active or healed left auricular endocarditis. In 7 of the 18 patients with arteritis, lesions diagnostic of rheumatic heart disease were also found, and the vascular involvement was mainly confined to the heart. In the remaining 11 patients, there were no pathological processes other than rheumatoid arthritis that might be associated with the arteritis, and the vascular lesions were considered to be the arteritis of rheumatoid arthritis. The arteritis of rheumatoid arthritis was encountered most frequently in the heart, muscles, and nerves, and occasionally in synovial tissue. No vascular lesions were encountered in those viscera that are commonly affected in other forms of generalized arteritis, though diseased vessels were sometimes found in certain unusual situations, e. g., periosteum, esophagus, trachea. The arteritis usually seemed to be of subacute form, sometimes with necrosis, and it affected small arteries or arterioles. Thrombosis was unusual and aneurysm formation was not seen. Individual patients sometimes showed arterial lesions in different stages of development. The pathogenesis of the arteritis remains obscure. The arteritis of rheumatoid arthritis can be differentiated from that of polyarteritis nodosa, rheumatic fever, systemic lupus erythematosus, temporal arteritis, dermatomyositis, and scleroderma. The incidence of arteritis in rheumatoid arthritis is probably considerably higher than that recorded here, for several cases were incompletely examined. Multiple blocks were taken from the heart in 33 cases, 8 of which showed arteritis; whereas a single block was taken in 27, and only 1 showed arteritis. Synovial tissue, muscle, and nerve were examined in only one-third to one-half of the total number of cases. Examination of serial sections might also have increased the incidence.

Hemorrhagic Syndrome Caused by a Circulating Anticoagulant. P. F. Baratta, F. Bertolani, G. M. Guidotti and G. C. Manfredi. *Minerva med.* 45:1780-1784 (June 20) 1954 (In Italian) [Turin, Italy].

A case of hemophilia-like disease caused by a circulating anticoagulant is reported in a 50-year-old man. The condition, which had been present in the patient several times before, became manifest seven days before his admission to the medical clinic of the University of Modena when he accidentally bit his tongue. The diagnosis of thrombopenic purpura was ruled out because the number of blood platelets, the clot retraction, and the capillary fragility were not altered. Normal values of prothrombin and fibrinogen excluded the presence of hypoprothrombinemia and fibrinogenopenia. Hemophilia was ruled out on the basis of the clinical picture, the objective findings, and the family history. A tentative diagnosis of hemophilia-like disease was made. It was confirmed when, in an attempt to determine the reciprocal influence on the coagulation time of the patient's blood and the blood of a healthy person, the latter failed to check the coagulation defect. Had the patient's condition been hemophilia, the normal blood would have checked the defect. The result indicated that a factor with an anticoagulant action was present in the patient's circulation. Repeated laboratory tests revealed by exclusion that this anticoagulant was a thromboplastin-antagonizing factor. Other authors who have studied these conditions reported that this factor is nondialysable, resistant to heat and storage, and belongs, as a rule, to the gamma globulin fractions. This last feature suggests the probable antibody nature of this anticoagulant; however, this origin was difficult to prove in the authors' case. The gradual return to normal of the coagulation process without any therapy during the first few weeks of hospitalization and the patient's history of repeated hemorrhagic episodes in the past seem to indicate that in this case the thromboplastin-antagonizing factor had been present from infancy and that the hemorrhagic syndrome had a recurrent evolution. The patient's statements that a brother had died of hemorrhagic complications following a trauma and that a maternal cousin had been hospitalized three times because of hemorrhagic complications following a tooth extraction or a minor trauma suggest that in this case the condition may have been familial. This is the first such observation on hemophilia-

---

The place of publication of the periodicals appears in brackets preceding each abstract.

Periodicals on file in the Library of the American Medical Association may be borrowed by members of the Association or its student organization and by individual subscribers, provided they reside in continental United States or Canada. Requests for periodicals should be addressed "Library, American Medical Association." Periodical files cover 1945 to date only, and no photoduplication services are available. No charge is made to members, but the fee for other borrowers is 15 cents in stamps for each item. Only three periodicals may be borrowed at one time, and they must not be kept longer than five days. Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors, and can be obtained for permanent possession only from them.

like disease in the literature. The clinical picture of hemophilia-like disease does not differ much from that of hemophilia; the main distinguishing feature is the different response of the two conditions to blood transfusion. Unlike hemophilia, the hemophilia-like disease is not benefited by it.

Hemorrhage Caused by Blood Transfusion. I. Zatz. Arq. Depart. assist. psicopat. 19:149-150 (Jan.-June) 1954 (In Portuguese) [São Paulo, Brazil].

Chevalier's syndrome or hemotrypsia consists of the paradoxical effect of blood transfusion provoking hemorrhage. The syndrome may occur in patients with instability of the blood due to hemorrhagic diathesis or to disorders of the blood-forming organs, especially leukemia, hemolytic jaundice, insufficiency of the liver, and hemogenia. The subject of the report is a premature infant of 1,300 gm. who, at the age of 1½ months, had acute dystrophy and acute dyspepsia. A blood transfusion of 40 cc. of homologous blood, group B and Rh positive, was planned to be given at the rate of 16 drops a minute. Within five minutes the patient began to bleed from her mouth and nose. The total quantity of blood given to her was 2 cc. No further attempt to transfuse blood was made. Tests for compatibility of the blood were made before transfusion and after the hemorrhage. The treatment consisted of amino acids, vitamins, and a proper diet, with the patient kept continuously in the incubator. With the improvement in her condition during a two-months' period, her weight increased to 2,500 gm. At the age of 3½ months she suffered a loss of weight due to dyspepsia. She received a daily transfusion of 50 cc. of blood for two consecutive days without untoward effects. The author believes that the instability of the patient's blood was due to lability of the capillaries or else to hypoprothrombinemia in relation to prematurity. With improvement of the general condition of the patient, her blood became stable, with consequent control of the hemorrhagic syndrome.

Hepatic Tumors in Rats Following Prolonged Ingestion of Milk and Egg Yolk. N. Nelson, P. B. Szanto, R. Willheim and A. C. Ivy. Cancer Res. 14:441-444 (July) 1954 [Chicago].

Ten male and 10 female albino rats were placed on a diet designed to produce arteriosclerosis. The diet consisted of 5% powdered egg yolk in whole milk. The mixture was homogenized, but during the course of the day the yolk rose to the top of the crocks, so that the composition of the diet as ingested was more than 5% egg yolk. Fresh diet was distributed morning and evening. The animals were purposely chosen from different age groups. The males were 10 to 23 weeks and the females were 15 to 19 weeks old. When the animals appeared to be moribund they were killed. Some died spontaneously, and all surviving animals were killed at the end of a two year period. Tumors that appeared to be hepatomas developed in three male and in three female animals. These 6 animals belonged to the group of 10 animals, 4 males and 6 females, that had survived on the milk and egg yolk diet for more than 18 months. The tumors developed in fatty but noncirrhotic livers. Bile duct proliferation was slight. No hepatic tumors occurred in a group of 25 animals of the same age receiving normal diets. In commenting on these observations Nelson and co-workers point out that other investigators presented evidence of the high incidence of liver disease in people and animals suffering from malnutrition and showed that the forms of liver disease most frequently leading to cancer are those that result in bile duct proliferation. Such bile duct proliferation was observed in rats fed a diet high in carbohydrate, moderately high in protein, low in fat, and devoid of the fat-soluble vitamins. It caused surprise when hepatic tumors appeared in the overly nourished rats consuming a milk and egg yolk diet, high in fat and fat-soluble vitamins and low in carbohydrate. A possible common factor involved in the genesis of the hepatic tumors in obese rats and in undernourished animals is an abnormality in bile metabolism. It seems more than likely that the high percentage of cholesterol in the milk and egg yolk diet might in time interfere with the normal metabolism of bile. This suggestion gains credence from the work of Fitzhugh and Nelson, who observed hepatomas in 14 of 29 rats that were fed thiourea for two years. The relation of the thyroid hormone to cholesterol metabolism suggests a possible analogy between the two observations.

Endocardial Fibroelastosis: A Factor in Heart Disease of Obscure Etiology: A Study of 20 Autopsied Cases in Children and Adults. W. A. Thomas, R. V. Randall, E. F. Bland and B. Castleman. New England J. Med. 251:327-338 (Aug. 26) 1954 [Boston].

A review of the records of the 10,000 autopsies performed at the Massachusetts General Hospital during the last 25 years showed 24 cases of chronic heart disease with hypertrophy of uncertain cause, 20 of which were characterized by abnormal degrees of fibroelastosis. These 20 cases have been arbitrarily divided for purposes of discussion into three age groups: infantile (under 2 years), childhood (2 to 16 years), and adult (over 16 years). Infantile endocardial fibroelastosis is almost certainly congenital in origin; in some infants the symptoms of severe cardiac dysfunction are present almost from birth, and the condition has been reported in a stillborn infant. The endocardial fibroelastosis found in the childhood group is distinguished from that of the infantile group only by the age at which the symptoms appear and by a somewhat lesser degree of endocardial thickening and less striking hypertrophy. Various investigators believe that the latent period between birth and the onset of symptoms militates against the theory of congenital origin. This belief, however, is at variance with the freedom from impairment shown by many patients with congenital heart disease who lead a normal life for years before the onset of cardiac symptoms. The clinical and morphological similarities between the infantile and childhood types of endocardial fibroelastosis are undoubtedly strongly in favor of a common cause for both. All the patients in the adult group had some degree of fibroelastic endocardial thickening qualitatively identical with that found in the other two groups. Mural thrombosis was a notable feature in these patients, and the clinical course of their illness was often accentuated by embolization. The average duration of symptoms in the adult group was much longer than in either of the others, and chronic congestive heart failure was more prominent. Several of the patients stated that other members of their families had died of heart disease, and this lends support to the belief that the condition is congenital in origin. Efforts to establish a relationship between endocardial fibroelastosis and various other unusual types of heart disease, e. g., beriberi heart disease, myocarditis, East African endomyocardial necrosis, and South African cardiovascular collagenosis, are unconvincing, and there is ample evidence to show that they represent different entities. The principal theories advanced to explain the severity of the clinical symptoms in view of the relatively unimpressive morphological changes are those of interference with normal contraction by the thickened endocardium corresponding to that produced by constrictive pericarditis, impairment of conduction, and myocardial anoxia caused by interference with the vascular connections of the underlying endocardium. Each has much to recommend it, but none has been fully established, and it may well be that all of them are concerned in the process.

Ballistocardiography and Rheocardiography: Chronologic Relations. J. Moniz de Bettencourt. Gaz. méd. port. 7:87-90 (No. 1) 1954 (In Portuguese) [Lisbon, Portugal].

Cardiac contraction produces movement of the body and changes of electrical conduction within the body that can be recorded by ballistocardiography and rheocardiography, respectively. The author made simultaneous ballistocardiographic and rheocardiographic records in 14 normal persons. A high frequency undamped ballistocardiograph of the Starr type attached to a polycardiograph of the Phillips type was used. The more important stages of the rheocardiograph were marked with numbers 1 to 5, which correspond to the presystolic, systolic, prediastolic, and diastolic phases. The results were as follows: The G-wave of the ballistocardiogram occurs during the phase of negative deflection in segment 1-2 of the rheocardiogram, which corresponds to the isometric systole. The beginning of the phase of ventricular ejection is simultaneously recorded by upward tracings that form the "arterial wave" of the rheocardiogram and the I-wave of the ballistocardiogram. The peak of both waves occurs either simultaneously or that of the I-wave may occur slightly later, with a delay of a fraction of a second. The variation in the time of occurrence of both peaks depends on the form of the "arterial wave" of the rheocardiogram and the speed of ventricular ejection. The J and K waves of the ballistocardiogram occur during deflection of segment 3-4 of the "arterial wave" in the rheocardiogram, without any relation between the graphics. The collapse in the segment 3-4 of the rheocardiogram, which occurs at the beginning of the diastole, is in relation to the L-wave of the ballistocardiogram. The peak of the "venous wave" of the rheocardiogram, formed by segment 4-5, which occurs during diastole, is in relation with the O-wave of the ballistocardiogram, although there are some exceptions. The author says that the results show the independence between the mechanical phenomena and changes of electrical conduction within the body caused by cardiac contraction.

Results of Antibiotic Treatment of Pfeiffer Meningitis. C. Mose. Ugeskr. læger 116:1069-1072 (July 22) 1954 (In Danish) [Copenhagen, Denmark].

The diagnosis of Pfeiffer meningitis was confirmed bacteriologically in 31 patients (30 children, mostly under 3 years of age, and one adult) treated in Odense Hospital from 1932 to 1954. Of the 10 treated before the use of streptomycin therapy only one patient survived, while 20 of the 21 treated with streptomycin recovered. Supplementary treatment of meningitis due to Pfeiffer's bacillus with chloramphenicol may result in even greater improvement in the prognosis, and chloramphenicol is now given regularly in addition to streptomycin to all patients with the disease. The procedure is to give sulfonamide, penicillin, streptomycin, and chloramphenicol in the usual dose as soon as purulent meningitis is diagnosed, and when Pfeiffer meningitis is established bacteriologically treatment is continued with only streptomycin and chloramphenicol until the temperature has been normal for four or five days.

Acute Meningococcic Sepsis (Waterhouse-Friderichsen Syndrome). H. K. v. Rechenberg. Deutsche med. Wchnschr. 79:1208-1212 (Aug. 13) 1954 (In German) [Stuttgart, Germany].

Acute meningococcic sepsis with the triad of massive infection, severe circulatory collapse, and adrenal failure (Waterhouse-Friderichsen syndrome) associated with toxic shock and reflex reaction of the autonomic nervous system is reported in two sisters, aged 5 and 6 years, in whom the onset of the disease occurred in an interval of about 12 hours. Death resulted within 17 and 15 hours, respectively. Two distinct phases were noted in the fulminating course of the disease. The first was characterized by an acute onset in children who up to that time had been healthy, with vomiting, fever, and intestinal disturbance, and was followed rapidly by the second phase with its characteristic cyanosis, drop in blood pressure, coma, and convulsions. Signs of adrenal failure were absent in the first phase in which residual nitrogen values and the sugar content in the cerebrospinal fluid were normal, and eosinophils were absent, while massive infection was manifest. Necropsy revealed adrenal hyperemia with petechial extravasation in one patient and severe hemorrhage into the adrenal in the other. The adrenal cortical insufficiency was apparently responsible for death in one of the patients in whom purpura was observed two hours before death, when drop in blood pressure was still slight and there was no severe collapse. The occurrence of the disease in children who were sisters of relatively advanced age was suggestive of a predisposing constitutional component. These findings seem to support the author's concept that acute meningococcic sepsis may be partly a disease of adaptation with rapid occurrence of the phase of exhaustion of the adrenal cortex in the course of which necroses and hemorrhages of the adrenal cortex may result from overstimulation of the cortical cells by corticotropin. While invasion by meningococci normally produces abundant liberation of corticotropin, the massive infection and the unfavorable defense conditions make adaptation of the adrenal cortex to the emergency situation impossible, so that the phase of alarm is followed immediately by the phase of exhaustion. The intensive secretion of corticotropin places an extra load on the already exhausted adrenal cortex, with resulting degenerative changes of the cortex. Small diapedetic hemorrhages of the adrenals may result after the occurrence of necrosis and damage to the cells, since blood perfusion of the adrenals is abundant, and the bacterial toxins are damaging to the capillary walls. A simultaneous disturbance of coagulation with a hemorrhagic tendency is responsible for the fact that the hemorrhage of the adrenals becomes uncontrollable. The endocrinologically elicited impairment of the adrenals is characteristic and decisive for the second phase of the syndrome, while the hemorrhage is only a secondary phenomenon. Combined treatment with cortisone, penicillin, and sulfamethazine was given to a third patient, a 3-year-old girl with acute meningococcic sepsis. The patient was unconscious when admitted to the hospital 14 hours after the onset of the syndrome. There were acrocyanosis and multiple cutaneous hemorrhages. Meningococci were grown on culture from the cerebrospinal fluid. A total dose of 525 mg. of cortisone was given, with 100 mg. as the initial dose, which was repeated after four hours and was followed by 25 mg. every four hours for five days. Of a total dose of 4,200,000 units of penicillin, 2,500,000 units were given in the first 24 hours, and 1,700,000 units in the next six days. A total dose of 4 gm. of sulfamethazine was given in four days, with 1.5 gm. as the initial dose. The patient recovered and was discharged on the 12th day. Follow-up six months later showed no residual impairment of the adrenals.

Bacteremia Owing to Escherichia Coli: Review of 65 Cases. J. A. Spittel Jr., W. J. Martin, W. E. Wellman and J. E. Geraci. Proc. Staff Meet., Mayo Clinic 29:447-453 (Aug. 11) 1954 [Rochester, Minn.].

According to Spittel and associates, Escherichia coli, although not so frequently a cause of bacteremia as micrococci and streptococci, is nonetheless the commonest of the gram-negative bacilli to invade the blood stream. Reports concerning bacteremia due to Esch. coli are, however, surprisingly few. This report is concerned with 65 cases of bacteremia owing to Esch. coli observed at the Mayo Clinic from 1940 through 1953. The patients in this series varied in age from 6 days to 87 years. Forty-one of the patients were male, and 24 were female. In about 60% of these patients the genitourinary tract was the portal of entry. The gastrointestinal tract, including the biliary passages, serves as the portal of entry in about 30% of patients. In about 10% of the patients the portal of entry was not recognized. In chronic debilitating diseases, such as carcinomatosis, Esch. coli may be obtained in cultures of the blood shortly before death. In about 40% of the 65 patients the bacteremia was associated with an operative procedure performed on either the gastrointestinal tract or the urinary tract. More than 75% of the male patients were 50 years old or more, while 50% of the female patients were less than 50 years of age. This disparity in age is ascribed to the corresponding increased incidence of genitourinary complaints and manipulations in the two sexes during these age periods. Antibiotic therapy with a member of the tetracycline group and streptomycin or dihydrostreptomycin or a combination of the two agents is the treatment of choice in blood stream infections with Esch. coli. The mortality was 10% with this form of therapy, whereas with the sulfonamides it was 20% and before that 40%. However, the prognosis of this form of bacteremia is determined to some extent by the severity of the initial lesion, the age of the patient, the presence of debilitating disease, the antibiotic sensitivity of the infecting organism, and the duration of the infection before the institution of antibiotic therapy.

Comparative Effects of Aspirin, ACTH, and Cortisone on the Antistreptolysin "O" Titer and Gamma Globulin Concentration in Rheumatic Fever. B. L. Stolzer, H. B. Houser and E. J. Clark. J. Lab. & Clin. Med. 44:229-234 (Aug.) 1954 [St. Louis].

Antistreptolysin "O" appears in most patients with streptococcic infection during the second week of illness and reaches maximum titers between the third and fifth weeks. In patients in whom rheumatic fever develops after a streptococcic infection, the maximum titer attained, on the average, is higher than in uncomplicated cases. The curve of the gamma globulin response to a streptococcic infection generally parallels the curve for antistreptolysin. The average gamma globulin concentration is higher in patients in whom rheumatic fever develops than in uncomplicated cases. There have been reports of a rapid decline in antistreptolysin and gamma globulin concentration after the administration of corticotropin and cortisone to patients with rheumatic fever. This paper reports comparison of the effects of corticotropin, cortisone, and aspirin on the antistreptolysin "O" titer and gamma globulin concentrations in 144 young men in an Air Force hospital with acute rheumatic fever. Sixty patients received aspirin, 43 were given cortisone, and 41 were given corticotropin. In 85% of the patients treatment was begun within the first 14 days after the onset of their illness. It was found that corticotropin had the most profound effect on the elevated antistreptolysin titer and gamma globulin concentration in the young men with acute rheumatic fever, while aspirin had the least effect, if any. The effect of cortisone occupied an intermediate position and was not significantly different from that of aspirin. This difference in degree between the corticotropin and cortisone groups may, in part, have been related to the dosages of each drug employed, the patients receiving cortisone showing fewer signs of hyperadrenalism than the group receiving corticotropin. These data are further evidence that corticotropin and cortisone decrease the amount of circulatory antibody, but controversy exists whether this decrease in circulating antibody is the result of an increased rate of destruction or an inhibition of synthesis of antibody. A slight increase occurred in the average gamma globulin levels in all three treatment groups after the discontinuance of therapy, and at this time almost all of the patients in the three groups were experiencing a laboratory or clinical rebound. The cortisone-treated patients showed the least pronounced increase. At the end of 13 weeks the same relative position of the curves of the three treatment groups was maintained. Fourteen months after the onset of therapy the average gamma globulin concentrations in the corticotropin and cortisone-treated patients were the same, and the average gamma globulin level for the aspirin-treated patients was slightly higher.

SURGERY

Hyperparathyroidism: Frequency and Operative Treatment. P. Fogh-Andersen. Ugeskr. læger **116**:796-801 (May 27) 1954 (In Danish) [Copenhagen, Denmark].

Primary hyperparathyroidism due to adenoma formation in the parathyroid glands is present in perhaps from 5 to 8% of all patients with concrements in the urinary tract. Systematic examination of all patients with urolithiasis is important. Repeated determinations of the serum calcium and the serum phosphorus together with quantitative determinations of the urine calcium will usually reveal a hitherto unnoticed hyperparathyroidism. Hyperparathyroidism should be borne in mind not only in all cases of kidney stone, but also in every case of reduced renal function of vague cause. Patients with bilateral nephrocalcinosis are especially to be suspected. Of the 12 patients reported on 11 were operated on at the Rigshospital in the course of two years. Systematic examination of the calcium metabolism in 78 patients with urolithiasis revealed hyperparathyroidism in 4, and 7 patients with hyperparathyroidism were admitted from other departments. The 12th patient is well 12 years after operation. There was no postoperative death. Without treatment the prognosis in hyperparathyroidism is unfavorable, although a long period of time may elapse before the renal function is so compromised as to make the condition catastrophic. The sooner a parathyroid adenoma is diagnosed and removed, the greater the chance of recovery. Surgical treatment can offer difficulties. In one patient the adenoma, weighing 17 gm. and situated in the mediastinum over the tracheal bifurcation, was found only on the third operation. In this patient death occurred a month later from uremia. One patient is well two and a half years after excision of a large parathyroid adenoma located between the esophagus and spinal column and extending into the posterior mediastinum. The continued high serum calcium in one patient in spite of the removal of two parathyroid adenomas points to remaining adenoma tissue, perhaps of ectopic location; the patient is to be operated on again.

Results of Surgical Treatment of Bronchial Carcinoma: Observations on 135 Cases. E. J. Zerbini and A. D. Jatene. Rev. Assoc. med. brasil. **1**:79-88 (March) 1954 (In Portuguese) [São Paulo, Brazil].

In the course of the last seven years the authors observed 135 cases of bronchial carcinoma. Forty patients were inoperable. Fifty-two patients showed unresectable tumors during an exploratory thoracotomy. The tumor was resectable in 43 patients. Resectability was more favorable and the period of survival after the operation of longer duration in the 28 patients who had symptoms for less than six months prior to the operation than in the 15 patients with symptoms of longer duration. It was more favorable in the 26 patients with segmental or peripheral tumors than in the 17 patients with tumors located in the lobar or main bronchi and more favorable in the 14 patients with adenocarcinoma than in the 17 patients with undifferentiated or squamous cell tumors. The operation consisted of pneumonectomy in 36 patients, lobectomy in 5, and segmental resection in 2. Nine patients with extensive lesions in the mediastinum, who had a radical pneumonectomy, died in the immediate postoperative period; 14 died within two years after the operation; and 20 patients are still living. The period of survival of the group from appearance of symptoms to date was as follows: In the group of 40 inoperable patients 39 died, with an average period of survival of eight months from appearance of symptoms to the occurrence of death; one patient is still living. In the group of 52 patients who had an exploratory thoracotomy, 6 are living. The period of survival for those who died was 10½ months. In the group of 43 patients who had resection, the average duration of the disease up to death was 21 months. In the group of 20 patients who are living after resection, 4 have lived for more than two years after the operation and one for nearly five years after the operation. The authors conclude that exploratory thoracotomy does not diminish the average duration of life of patients; pulmonary resection of bronchial cancer gives the patients a period of life twice as long as that observed in inoperable patients and makes the condition of the patients comfortable.

Sympatho-Adrenal Surgery in Malignant Phase of Essential Hypertension. S. T. R. Revell Jr., F. J. Borges, G. H. Yeager and others. Ann. Int. Med. 41:50-69 (July 1954) [Lancaster, Pa.].

During the past two and one-half years Revell and associates studied 17 patients in the malignant phase of essential hypertension. Their objectives were: (1) to establish rigid criteria for selection of patients in order that comparisons might be valid, (2) to determine if it were possible to reverse the renal insufficiency so common in this disease, and (3) to compare the results of adrenalectomy with those of combined adrenalectomy and sympathectomy. The criteria for selection were: a rapidly progressive hypertensive state, papilledema with hemorrhagic exudates, and the absence of any demonstrable primary cause for the hypertension. The clinical entity so selected seems to parallel the pathological entity of necrotizing arteriolitis. There was necropsy or renal biopsy material available from 12 patients, and in 11 there was necrotizing arteriolitis. The one exception was explained by an error in selection. Six patients died during observation before treatment could be undertaken. The second group of five patients were subjected to adrenal surgery. All of these died, only one of them surviving the postoperative period. The six patients of the third group were treated by sympathectomy and total adrenalectomy. Reversibility of necrotizing arteriolitis in the kidney could not be established, but there was some improvement in renal function. Thirteen of the 17 patients had blood urea nitrogen levels of more than 40 mg. per 100 cc., and all had levels above 20 mg. per 100 cc. Although no beneficial results were obtained with adrenalectomy in the malignant phase of essential hypertension, the authors feel that their experience with the combined procedure of total adrenalectomy and bilateral sympathectomy warrants further investigation.

Surgical Treatment of Pulmonary Tuberculosis. V. O. Björk. Acta chir. scandinav. **107**:371-383 (No. 5) 1954 (In English) [Stockholm, Sweden].

Bed rest, antimicrobial therapy, collapse therapy, and resection are the four methods of treating pulmonary tuberculosis now in use, and every tuberculous patient must be treated by a combination of these methods chosen to fit his individual requirements. Treatment should be planned with the following questions in mind: 1. Which procedure will render the sputum and gastric washings negative by the guinea pig test? 2. What is the operative mortality for a particular procedure? 3. What loss of pulmonary function does it entail? Consideration should also be given to the fact that tuberculosis is not confined to the segments of the lung in which changes can be demonstrated roentgenographically. Thus small nodules, invisible on the roentgenograms but palpable, are often found during intrathoracic exploration, and others, too small to be palpable, can often be seen in the intersegmental planes during resection. The primary purpose should be to render the patient free from tubercle bacilli, and any plan of treatment that can accomplish this purpose without making the patient a respiratory cripple should be adopted at the outset, thus avoiding waste of time and loss of function. Palliative treatment, however, may prove of great benefit to patients with far advanced bilateral disease in whom a cure cannot be obtained. Bed rest and chemotherapy constitute the basic treatment in all cases. Thoracoplasty and resection can often be advantageously combined in treating giant cavities, tuberculomas, cavities in the middle and lower lobes, bronchial fistula, empyema, cavity rupture, residual cavities underlying a thoracoplasty or destroyed lungs or lobes, and cases of bronchiectasis with positive sputum. The lowest operative mortality rate in the author's first 435 resections was associated with segmental resection; this rate was not increased when the segmental resection was combined with lobectomy.

Resection of Aneurysms of the Aorta. C. Dubost and C. Dubost. Angiology 5:260-281 (June) 1954 [Baltimore].

Six cases of operated aortic aneurysms are analyzed. Three of the aneurysms were located in the abdominal aorta and were successfully treated by resection and homografts. The follow-up on one of these patients has been three years; he is well and working. The fourth patient had a coarctation complicated by an aneurysm; resection and anastomosis were performed with good results. An aneurysm of the ascending arch was also resected and the pathological tissue sutured, but the patient died of massive hemorrhage eight months after operation; it is assumed that a second aneurysm formed (no autopsy). The sixth case was that of a fistula connecting the renal artery to the renal vein in a 47-year-old woman who had had a left nephrectomy for tuberculosis 17 years before. The fistula communicated with the aorta, thus constituting an arteriovenous renorenal juxta-aortic fistula. Only six cases of this type have previously been reported. Excision of the sac and suture of the orifices was a successful surgical treatment. At the present time, the number of syphilitic thoracic aneurysms is diminishing. This is particularly fortunate in view of the fact that their surgical treatment is unsatisfactory. In the aortic arch only a small aneurysm without any sign of exteriorization may be explored. A lateral sac may sometimes be resected, but there is the risk of secondary rupture of these sutures, which are made in pathological tissue. The fact that it is possible to clamp the thoracic aorta after a shunt has been arranged gives a favorable outlook for curing aneurysms of the descending aorta by resection followed by grafting. The most satisfactory progress being made at this time in the treatment of aortic aneurysms is in those of the infrarenal segment. Active surgical therapy is called for in this disease, even though it be merely palliative.

Indications for Surgical Treatment of Pulmonary Tuberculosis. P. Vaksvik. Acta chir. scandinav. 107:383-391 (No. 5) 1954 (In English) [Stockholm, Sweden].

Improvements in diagnostic technique, operative technique, and anesthesia, together with the advent of antibiotics and chemotherapy, have altered and extended the indications for surgical intervention in patients with pulmonary tuberculosis. Medical treatment alone seldom results in a complete and permanent closure of old, thick-walled cavities, and even when cavities are of recent origin closure is uncertain and the percentage of recurrence is high. Active treatment, i. e., collapse or resection, alone or in combination, should therefore be planned for unless distinct improvement, with pronounced shrinking of the cavity, is brought about by a few weeks of bed rest and antituberculous medication. A review of the experience at the Glittre Sanatorium in Norway during the period from Jan. 1, 1948, to Sept. 1, 1953, shows that the differences in the postoperative (within two months) mortality rates for extrapleural pneumothorax, thoracoplasty, and resection are so small that they need no longer be considered in the selection of appropriate surgical treatment. The functional results, possible complications, and degree of primary sterilization to be expected from each procedure, however, must still be taken into consideration. Extrapleural pneumothorax is especially indicated in the presence of extensive contralateral collapse; 86% of 149 patients so treated were free from bacilli after an average period of three and one-half years. Cavities in the apicoposterior segment of the upper lobe can best be treated by a Holst roof thoracoplasty. This procedure, which can be carried out in one stage, gives selective collapse with good results; thus, after an average period of one and one-half years, residual and recurrent cavities were found in only 8.7% of 265 patients in whom it was performed. Sterilization has been secured in 76% of the 406 patients subjected to resection between April, 1948, (when streptomycin was introduced), and Dec. 31, 1952. These results are apparently less favorable than those obtained by thoracoplasty; many of the patients, however, were in poor condition at the time of resection and premedication was often inadequate, with only one week of streptomycin and *p*-aminosalicylic acid treatment being given preoperatively in some cases. Better results were obtained with the more radical procedures, such as pleuropneumonectomy and pneumonectomy (86% and 80% sterilized, respectively), although the most severely ill patients were in the groups so treated. The highest incidence of complications was noted in patients treated by segmental resection, probably as a result of the unavoidable inadequacy of the preoperative care.

Isolated Valvular Pulmonic Stenosis: Clinical and Physiologic Response to Open Valvuloplasty. S. G. Blount, M. C. McCord, H. Mueller and H. Swan. Circulation 10:161-172 (Aug.) 1954 [New York].

In 15 patients with isolated valvular pulmonic stenosis operated on at the surgical department of the University of Colorado Medical School in Denver surgical correction of this relatively common congenital anomaly was effected by pulmonary valvulotomy, with the transventricular approach (Brock's technique) in eight patients and the new pulmonary arterial approach in seven patients. There were two operative fatalities in the first group, while no operative fatalities occurred in the second group. Published data of postoperative hemodynamic changes after transventricular pulmonic valvuloplasty performed in 31 cases collected from the literature and in five of the authors' patients revealed evidence of inadequate relief of the stenosis and lack of uniformity of results. The advent of open heart surgery with the aid of hypothermia made possible the direct vision of the stenotic pulmonic valve from the arterial side. The pulmonary artery was incised and the stenosis relieved by incision or partial excision as indicated in each case. Preoperative and postoperative clinical and physiological data obtained in five patients were compared with those in five patients in whom the approach to the valve was through the wall of the right ventricle. Although subjective postoperative improvement was described in patients in both groups, such an evaluation of results is not considered to represent a critical analysis of the success of the operation. The physiological data determined after the transarterial approach to the stenotic valve revealed uniformly good results. The right ventricular systolic pressure was reduced to normal levels in all five patients, and the pulmonary arterial pulse contour assumed a normal form in each case. There was obliteration of the preoperative systolic pressure gradient from the right ventricle to the pulmonary artery in every patient. Thus complete relief of valvular obstruction was shown in the patients operated on by the direct technique in striking contrast to the inadequate and variable relief of obstruction when the valve was approached through the right ventricle. The transarterial approach, therefore, is recommended as the method of choice in the surgical treatment of isolated valvular pulmonic stenosis.

Absence or Hypoplasia of a Pulmonary Artery with Anomalous Systemic Arteries to the Lung. H. C. Maier. J. Thoracic Surg. 28:145-162 (Aug.) 1954 [St. Louis].

The pulmonary vascular plexus at one stage of embryologic development has important thoracic branches from the aorta that normally disappear. These vascular communications with the aorta or its branches may persist when there is faulty development of the pulmonary artery. Although most recently reported cases of anomalous systemic arteries to the lung have been discovered because of the associated presence of bronchiogenic cysts, bronchiectasis, or sequestration of lung tissue, anomalous arteries from the aorta or its branches may enter grossly normal pulmonary tissue. Anomalies of the bronchial branching and lobar development may also be present. The clinical features and the radiological findings in three patients, a 9-year-old boy, a 37-year-old woman, and a 4-month-old baby girl, with absence of the pulmonary artery to the right lung are presented. In the case of the boy a right pneumonectomy was performed because of recurrent pneumonia, productive cough, and occasional hemoptysis. Microscopic examination of the removed lung revealed uniform fibrosis of the lung with thickening of the interalveolar septums. One wonders, therefore, whether the deranged circulation played a significant part in the pulmonary symptoms. In the case of the woman the absence of the right pulmonary artery and the presence of a large left pulmonary artery and of hypertrophied bronchial arteries did not cause significant cardiocirculatory derangement, and the patient had only slight shortness of breath and slight cough. No specific therapy was recommended. The baby girl was admitted to the hosptial with the chief complaints of intermittent cyanosis, dyspnea, and fever. On roentgenograms of the chest a greatly enlarged heart was seen. The patient improved temporarily after digitalization, but after two days her course became progressively worse. She died, and necropsy revealed the absence of a branch of the pulmonary artery to the right lung, while 1 cm. above the aortic valve a large vessel, 2.7 cm. in diameter, arose from the left side of the aorta and crossed the mediastinum to enter the right lung. These findings indicated that an essentially normal distribution of the blood flow to both lungs might have resulted from a surgical transfer of the proximal end of the anomalous artery from the aorta to the side of the main pulmonary artery. Three additional patients, a 12-year-old girl, a 36-year-old woman, and a 14-year-old boy, are reported on to illustrate the occurrence of a hypoplastic, unilobar right lung with a small pulmonary artery and several systemic arteries going to that abnormal lung. Of these three patients, two, the girl and the woman, had many unique features in common. The degree of mediastinal displacement was so pronounced that dextroposition of the heart was present. The border of the right side of the heart was not clearly outlined but merged with other shadows in the lower two-thirds of the right hemithorax. The degree of cardiac displacement and rotation was much greater and unlike that seen after surgical removal of the right middle and lower lobes. The systemic vessels that entered the hypoplastic but uninfected and ventilating lung resulted in an augmented blood flow with high pressure to that lung. Dyspnea, which was the first and chief complaint in these two patients, was due to local pulmonary engorgement, and the patients' hyperventilation probably was produced by the same mechanism. Ligation of the systemic arteries going to the abnormal lung led to disappearance of any complaint of dyspnea. In the third patient, who had frequent upper respiratory infections and persistent cough, the hypoplastic lung was removed; on microscopic examination diffuse emphysema with alveolar rupture throughout the lung parenchyma was seen.

Lipoid Granuloma of the Lung. R. A. Daniel Jr. and T. M. Nolen Jr. Am. Surgeon 20:849-862 (Aug.) 1954 [Baltimore].

Sclerosing lipoid granuloma of the lung simulating bronchogenic carcinoma was found in seven patients seen at the Vanderbilt University Hospital during the last seven years. All the patients were active, healthy adults before the onset of the symptoms caused by the pulmonary lesions, and all admitted the habitual use of mineral oil as a laxative. Laxatives are usually taken at night, and since mineral oil, when taken orally or administered through the nose, easily finds its way through the trachea to the alveoli, patients who use it habitually may eventually aspirate a considerable quantity without knowing that they have done so. The resulting inflammatory and fibrotic changes may lead to the formation of a hard mass that is often difficult or impossible to distinguish from carcinoma. Surgical excision of the lesions was clearly indicated in all the patients in this series, but in five the resemblance to carcinoma was so great that pneumonectomy, later found to have entailed the loss of lobes that were essentially normal, was performed. Chronic cough, sputum production, hemoptysis, frequent or persistent respiratory infections, wheezing, dyspnea on exertion, anorexia, and weight loss were the symptoms observed, in various combinations, by all the patients, in some of whom they were mild, while in others they were severe and debilitating. None of the patients had any neurological and developmental lesions or any evidence of esophageal obstruction or derangement of the swallowing mechanism. Biopsy should not be used to establish the diagnosis in difficult cases, because, when carcinoma is present within a serous cavity, exposure and section of the tumor may be followed by the dissemination and implantation of viable tumor cells elsewhere in the cavity. Unidentifiable lesions should be completely extirpated. Pulmonary disease induced by the inhalation of petroleum products is largely preventable. Steps have already been taken to discourage the use of oily nasal applications and equally wide publicity should be given to the fact that serious consequences may result from the habitual and possibly even the occasional use of mineral oil as a laxative, especially when it is taken at night.

NEUROLOGY & PSYCHIATRY

Metastatic and Primary Intracranial Tumors of the Adult Male. K. M. Earle. J. Neuropath. & Exper. Neurol. 13:448-454 (July) 1954 [Baltimore].

In a five year period from 1948 to 1952 at the Veterans Administration Center, Los Angeles, 3,946 autopsies were made. The brains were removed and examined in 3,877 (all but 69) of these cases. Since there were only 45 females, these are disregarded. Among the males there were 1,498, or 37.9%, with malignant neoplasms. There were 99 primary intracranial tumors and 167 metastatic tumors of the brain. Of the intracranial tumors 62.7% were metastases and 37.2% were primary tumors. Glioblastoma multiforme was the commonest primary intracranial neoplasm. Bronchogenic carcinoma was the commonest source of metastatic brain tumors (57%). Other primary sources were: malignant melanoma in 7.1%, large intestine in 6.5%, kidney in 4.6%, and testis in 4.6%. No other primary source accounted for over 3% of all metastatic tumors. The metastases to the brain were found to be more often multiple than solitary. The results of this study are at variance with most other reports, which indicate that primary intracranial tumors are more frequent than metastatic intracranial tumors. The wide variations are usually attributed to differences in the source of the material (whether it was obtained at operation or at autopsy) and in type of hospital. In large neurosurgical clinics, the incidence of metastatic tumors of the brain is low; in a large general hospital the incidence is high. However, even in these statistics the incidence of metastatic brain tumors is much less than that of primary brain tumors. Earle feels that this is explained by the fact that the brain is not routinely removed and examined at every autopsy.

Blood Level of Basal Pyruvic Acid in Poliomyelitis. G. Caffarena and M. Merlini. Minerva pediat. 6:409-411 (June 15) 1954 (In Italian) [Turin, Italy].

The authors studied the blood pyruvic acid levels in 25 children with poliomyelitis. The patients were kept fasting and at rest before the tests were made. The first determination was made soon after admission and early after the onset of paralysis. The results showed that the blood pyruvic acid value was almost normal at the onset of the disease and changed only slightly during the first 20 days. The constant and characteristic finding was a decrease, in 18 patients, of the values that were found with the third measurement as compared with those found with the second. The number of patients studied is too small to permit a definitive statement. The authors suggest that the fact that the pyruvic acid levels in the blood did not increase during the acute phase of the disease may be ascribed to an increased storage of this acid in the paralyzed muscles. The decrease that was found in the third measurement as compared to the values obtained in the second may be due to a gradual attenuation of the acute disease while the action of the paralysis on the pyruvic acid in the involved mus [illegible] still [illegible].

Evaluation of Gamma Globulin Prophylaxis of Poliomyelitis in 1953. L. M. Schuman. *Illinois M. J.* **106:**1-12 (July) 1954 [Chicago].

Schuman in his capacities as director of the division of preventive medicine of the Illinois Department of Public Health and as a member of the National Advisory Committee for Evaluation of Gamma Globulin states that the analysis of the preventive value of mass prophylaxis in 1953 was admittedly not based on purely experimental field data with rigid controls. An attempt was made to detect consistent deviations from classical epidemiological patterns in mass inoculation areas in the belief that a pronounced preventive effect might be observed. Four approaches were available for the evaluating group: 1. Asymmetry of the epidemic curve for the inoculated age group—the observed left skew asymmetry among several counties receiving globulin inoculations in 1953 could not be attributed to a gamma globulin effect. 2. Age shift of cases to older age groups after mass inoculations—it appeared that a shift of incidence to older age groups with progress of the epidemic is one of the natural modes of poliomyelitis outbreaks, and, thus, could not be described as a globulin effect. 3. Modification of the duration of the epidemic—the mean epidemic duration in 13 mass inoculation areas was 8.5 (±2.11) weeks and that of 13 uninoculated areas was 9.2 (±2.62) weeks; the difference of 0.7 weeks was not statistically significant. 4. Differences in paralytic attack rates between inoculated and uninoculated children in the eligible age group—such a comparison was deemed invalid because of the fact that the denominator of uninoculated children was unknown for all the mass inoculation areas and because of the obviously disparate size of the groups and factors of disparate composition that made the uninoculated group a biased selection. In the absence of statistically measurable results, the preventive effect of gamma globulin in community prophylaxis, as practiced during 1953, has not been demonstrated. Also, no modification of the severity of paralysis by gamma globulin was shown. Data on the efficacy of gamma globulin in household contacts that were accumulated in 1953 indicate that with the preparations employed and in the doses used, the administration of gamma globulin to familial associates of patients with poliomyelitis had no significant influence on: (1) the severity of paralysis developing in subsequent cases, (2) the proportion of nonparalytic poliomyelitis among the subsequent cases in which gamma globulin was given before onset, and (3) the classical pattern of familial aggregation of cases in the country at large. In 1954, gamma globulin will be issued for group inoculations at the discretion of the local full-time health officers and the local medical societies in Illinois. None will be available for household contact use.

Contractures in Thoracic Spinal Column and Paralytic Scoliosis in Poliomyelitis. F. Ammitzbøll, M. Schlimtzek and E. Snoorason. *Nord. med.* **51:**803-807 (June 10) 1954 (In Danish) [Stockholm, Sweden].

Examination of patients of the 1952 poliomyelitis epidemic showed clinical signs of beginning or already developed scoliosis in 150 cases, according to which about 17% of the 866 patients with clinically demonstrated paresis or about 5 or 6% of the total 2,722 poliomyelitis patients, paralytic and nonparalytic, have scoliosis. Since paralytic scoliosis can develop some years after the poliomyelitis, the time of observation for the present material does not exclude later development of scoliosis. Scoliosis or limited motility of the spinal column is regarded as an expression of sequelae of changed function in muscles and fascia in and about the spinal column. In a number of cases milder paresis in the spinal column in apparently nonparetic patients was demonstrated on tests in bending to the side. In the partially paralyzed muscles the paretic tissue is transformed into connective tissue, which causes the characteristic contractures. Depending on the extent and degree of paralysis and the motility of the spine in different patients it would appear that contractures of the spinal column, without the development of visible scoliosis, can be considered as a manifestation of a pathological kind. When scoliosis is developed, the deformity is ascribed to further development of contractures in the spinal column after the primary paresis. Of 60 patients with roentgenologically diagnosed scoliosis 58 had reduced motility on bending to one side or both sides. In patients with limited motility because of contracture on one side only the limitation of motility was always of the side of the concavity of the scoliosis. Since the contracture in practically all patients was in the lowest part of the thoracic column certain special conditions must prevail there. The necessity is stressed of examination of the spinal column in bending to the side in all cases of poliomyelitis when paralysis and contractures of the dorsal muscles, the ligaments and the spinal column are suspected.

Metastasis of Neoplasms to Central Nervous System and Meninges. S. Lesse and M. G. Netsky. *A. M. A. Arch. Neurol. & Psychiat.* **72:**133-153 (Aug.) 1954 [Chicago].

From 1938 to 1947 necropsies were performed upon 595 patients who died with cancer. In all these instances the brain was examined, but the spinal cord was studied in only 76 cases. Metastatic lesions were found in the central nervous system or meninges in 207 cases (35% of the total of 595 necropsies). The breast and lung were by far the commonest sources, accounting for more than one-half of the 207 patients with neuraxial metastases. The 207 patients with metastases to the neuraxis included 124 women and 83 men. The higher incidence in women is explained by the large number of patients with carcinoma of the breast included in this series. In most reported series there is a predominance of men which is related to a relatively greater frequency of primary bronchogenic neoplasms. The sex ratio of the patients with metastases from primary lung cancers was different from the usual. There were 33 men and 17 women (2 to 1), whereas the male to female ratio among the 229 patients with primary carcinoma of the lung was 3.4 to 1, that is, pulmonary neoplasms in women metastasized to the neuraxis relatively more frequently than those in men. This finding may be explained partially by the fact that adenocarcinomas are commoner in women, but squamous cell carcinomas occur more frequently in men. The adenocarcinomatous type of pulmonary neoplasm metastasizes more frequently to distant sites. The neuraxial metastases from the lungs caused symptoms in three-fourths of the cases, but only about half of those originating from mammary carcinomas caused symptoms. After onset of clinical signs of metastases to the neuraxis patients having tumors originating in the breast survived an average of five months and patients with pulmonary neoplasms survived an average of three months. Patients who died with leukemia or malignant lymphomas survived about six months after the onset of neural involvement. The neurological symptoms differed. In 5 of the 24 in whom the neurological symptoms appeared within 48 hours, the onset was apoplectic in nature. In 104 patients the complete development of the neurological symptoms required many days or weeks. Personality and intellectual changes occurred in only 5 patients with meningeal metastases but in 36 with parenchymal metastases. Pyramidal tract signs and seizures were also commoner in patients with parenchymal tumors. Extrapyramidal signs were not found in any patient, although the basal ganglion was invaded in 29 cases. The explanation of the low frequency of neuraxial metastases from malignant neoplasms of the gastrointestinal and some urogenital organs and the high frequency from carcinoma of breast, lung, and kidney is not readily apparent. The incidence of 35% of neuraxial metastases seems high in comparison with other reports, in which the incidence ranges from 2 to 6%, but the authors feel that this is in accord with the widespread visceral dissemination of neoplasms previously reported from their institution. The selection of material also influences the incidence.

Case of Trichinosis Simulating Meningitis. S. O. Freedman and M. Clamen. *Canad. M. A. J.* **71:**160-162 (Aug.) 1954 [Toronto, Canada].

The 47-year-old woman whose case is reported awoke with severe occipital headache and swollen eyelids and cheeks on July 24, 1953. She had several bouts of chills and fever. The facial swelling subsided in 2 or 3 days, but the headache and fever continued for the next 10 days. On July 31 her family began to notice personality changes. When hospitalized on Aug. 2, she was mentally dull, disoriented, and unable to cooperate. On physical examination neck stiffness, diminished knee and ankle jerks, and diffuse muscular and joint pain were found.

The following diagnoses were considered: (1) pansinusitis with possible cerebral abscess, (2) meningitis, (3) primary atypical pneumonia, and (4) perinephritic abscess. Antibiotic therapy, consisting of chloramphenicol and sulfadiazine for the first three days and oxytetracycline (Terramycin) for the next four days had no apparent effect. Trichinosis was first thought of on Aug. 9, when the history of facial swelling and muscular pain combined with eosinophilia was again mentioned. A muscle biopsy was done, and a section of gastrocnemius muscle showed the characteristic larvae of Trichinella spiralis encysted within partly formed capsules. The date of ingestion of the parasites was estimated to be five weeks previous to the time of biopsy and two weeks before the onset of symptoms. The lesson to be learned from this case is that trichinosis, like syphilis, can mimic almost any known disease. The authors cite other reports on encephalitis due to infestation with T. spiralis. Central nervous system manifestations are comparatively common, occurring in 10 to 17% of cases, usually in the form of diminished tendon reflexes and headache. However, only about 100 cases have been reported in which symptoms of the central nervous system were the predominating features of trichinosis.

PEDIATRICS

The Management of Haemolytic Disease of the Newborn. W. Walker and S. Murray. Brit. M. J. **2**:126-129 (July 17) 1954 [London, England].

The authors' experience with erythroblastosis neonatorum leads them to conclude that this disease is best treated by spontaneous delivery and early exchange transfusion. They claim that this treatment can reduce the mortality rate to 2%. Selection for the treatment of their 451 cases was based on the following criteria: positive Coombs' test with a cord hemoglobin level of 14.8 gm. per 100 cc. or less, or a cord hemoglobin level of 14.9 to 17.7 gm. per 100 cc. associated with a bilirubin level greater than 2.7 mg. per 100 ml. No infant with a cord hemoglobin of more than 17.7 gm. per 100 cc. received exchange transfusion. It is recommended that steps be taken to try to achieve 100% prediction by antenatal blood-grouping tests. As the severity of the disease cannot be predicted with certainty before birth by antibody titrations or the previous obstetric history, all cases should be delivered in a hospital affording the following facilities: collection and delivery of satisfactory cord-blood specimens; an around-the-clock serologic and pathological service; supplies of appropriate blood and means for full compatibility tests and concentrating cells; provision for the care and management of extremely ill, perhaps premature, babies; and means of performing adequate exchange transfusion. Every such center should serve an area in which there is a minimum of 5,000 births a year, that is, 25 cases of erythroblastosis neonatorum a year. Everyone should be aware of the clinical evidence of the disease, even in cases in which antenatal serologic tests have either not been carried out or appear to exclude the disease. Jaundice in the first 24 hours of life is virtually diagnostic.

Treatment of Erythroblastosis Fetalis. H. L. Teate Jr. J. M. A. Georgia **43**:698-705 (Aug.) 1954 [Atlanta, Ga.].

This study was made during the six year period from 1948 to 1954 and included babies born to 300 women whose serum contained Rh antibodies as well as a small group of infants transferred to the pediatrics service from other hospitals. All of the infants were followed up in the erythroblastosis follow-up clinic or by their private physicians. They were observed for from four months to six years. A definite evaluation of their development was not made in most cases until at least 6 months of age. The occurrence of choreoathetosis, muscle rigidity, opisthotonos, convulsive seizures, and mental retardation was considered evidence of brain damage (kernicterus). Postmortem examination was done on most of the infants who died. The presence of yellow pigment in the basal nuclei was considered evidence of kernicterus. The belief that the severity of erythroblastosis fetalis could be determined at birth by clinical evaluation of the infant proved erroneous. Many laboratory tests, such as blood counts, nucleated red blood cell count in peripheral smear, and the presence of Rh antibodies in the infant's blood help to indicate the severity of the disease. A high nucleated red blood cell count in the infant's peripheral blood smear usually indicated a severe course. Most of the infants who died but did not have kernicterus had moderate to low red blood cell counts at birth. Many of the infants in whom kernicterus developed, however, had moderate to high red blood cell counts at birth. Five antibody tests were done on a number of infants born to immunized mothers. The normal Rh positive infants usually showed no evidence of Rh antibodies. Most of the normal Rh negative infants had a negative test for red cell sensitivity and direct Coombs' test, indicating that their cells were not coated with blocking antibodies, but many of them had circulating antibodies passively transferred from the mother. No kernicterus occurred in the infants whose bilirubin levels remained low. The serum bilirubin level is apparently a good method of predicting a disease severe enough to result in kernicterus. Unless serum bilirubin levels can be determined at intervals of at least every 12 hours it seems advisable to treat all infants who have laboratory evidence of antibody-coated red blood cells with replacement transfusion. It is important that the procedure be done early, within eight hours after birth, since the mortality rate is low and kernicterus has not been seen in this group.

UROLOGY

Upper Urinary Tract Disease Associated with Urethral Stricture. J. D. Moffett Jr. and D. W. Goddard. J. Urol. **72**:293-295 (Sept.) 1954 [Baltimore].

Of 125 male patients between the ages of 14 and 79 years with urethral stricture none had any other obstructive lesions in the lower urinary tract. Most of the strictures were sequelae of gonorrhea. Forty-seven (37.6%) of the 125 patients had one or more diseases of the upper urinary tract. Only 6 of these 47 patients had symptoms suggestive of involvement of the upper urinary tract. Twenty patients had renal calculi, 30 had hydronephrosis or hydroureter, 17 had pyelonephritis, and 2 had pyonephrosis. Fifteen of the 47 patients had diminished renal function as shown by azotemia. Of the 65 patients with urethral stricture of from four months to five years' duration only 14 (21.5%) had upper urinary tract disease, while of the 60 patients with urethral stricture of more than five years' duration 33 (55%) had upper urinary tract disease. Only 27 (21.6%) of the 125 patients had received "adequate treatment," and of these only 4 (14.8%) had upper urinary tract disease; conversely, 43 (43.8%) of the 98 patients with inadequate or no treatment had abnormal upper urinary tract findings. Of the three types of complications occurring in 39 (31.2%) of the 125 patients, acute urinary retention requiring cystostomy was observed 19 times, periurethral abscess 26 times, and periurethral phlegmon 5 times. Two-thirds of these patients with complications showed some disease of the upper urinary tract. Of the 86 patients without a previous history of any of these complications, only 21 (24.4%) had evidence of damage to the upper urinary tract. All the patients who had had periurethral phlegmon showed some disease of the upper urinary tract. Disease of the upper urinary tract is associated with urethral stricture in men in a large percentage of cases. The absence of symptoms referable to the upper urinary tract in the presence of disease of the upper urinary tract is a striking feature of these patients. The longer the duration of the stricture the greater the frequency of upper urinary tract lesions. Adequate treatment of the stricture is of prime importance in the prevention of damage to the upper urinary tract. Acute urinary retention, periurethral abscess, and phlegmon associated with urethral stricture contribute to a pronounced increase in disease of the upper urinary tract. Investigation of the upper urinary tract in every patient with urethral stricture is desirable for proper evaluation and management.

Antibiotic Therapy of Urinary Tuberculosis: An Interval Report of Six Years Experience. R. M. Nesbit and C. C. Mackinney J. Urol. **72**:296-303 (Sept.) 1954 [Baltimore].

Antibiotic therapy consisting of daily administration of 2 gm. of streptomycin or dihydrostreptomycin and 12 to 15 gm. of *p*-aminosalicylic acid for 90 days with complete rest in a sanatorium for 6 to 12 months was practiced in 57 male and 33 female patients with tuberculosis of the urogenital tract. Isoniazid was given as an addition to this regimen when a second course of treatment was given either for relapse or to patients who failed to respond to the initial 90 day course. All patients were studied by cystoscopy, retrograde pyelography, and renal function tests. Twenty-four hour bladder urine as well as individual kidney specimens were tested by culture methods and guinea pig inoculation. Of the 90 patients, 65 (72%) had a conversion of urine to normal and remained clinically free from urogenital tuberculosis for six months to six years after the completion of treatment. Fifty-five patients responded favorably after one course of therapy, while 35 were initial failures or else relapsed after a temporary remission. Twenty-four of these 35 patients were given a second course of treatment, and 9 became free from tubercle bacilli after treatment. Two patients received a third course of treatment, and one of these showed normal urine after treatment (20 months at the present time), while the other relapsed 10 months after the third course of the antibiotic. Streptomycin was used in 46 of the 116 courses of treatment and yielded a remission rate of 52.2%, while 58.8% of 70 dihydrostreptomycin courses resulted favorably. There was no significant difference in the two groups. The incidence of untoward reactions was materially greater with streptomycin, although this antibiotic had the advantage of producing no apparent damage to the auditory branch of the eighth cranial nerve. Of the 25 patients who failed to respond or relapsed, 11 had unilateral renal tuberculosis with normal or abnormal pyelograms on the affected side and were not operated on except for 3 who had nephrectomy within the past six months; 7 whose kidneys were normal or who had nephrectomy and antibiotics for treatment of unilateral disease still had abnormal results owing to persisting cystitis and/or genital tuberculosis; the remaining 7 patients had bilateral disease.

OPHTHALMOLOGY

Ocular Histology in Premature Infants with Reference to Retrolental Fibroplasia. B. A. Ward. Brit. J. Ophth. 38:445-459 (Aug.) 1954 [London, England].

One hundred pairs of eyes taken from premature babies, 13 of whom were stillborn, were examined with regard to retinal vascularization and coaptation. The average characteristics of the eyes in this series were compared with characteristics of eyes showing variations in these processes in search of early signs of, and conditions predisposing to, retrolental fibroplasia. Thirteen per cent of the specimens showed an unusual degree of angioblastic activity, indicated by increased quantities of vasoformative tissue in the nerve fiber layer. This change was associated with no characteristic of retrolental fibroplasia apart from low birth weight. There was no evidence to suggest that it was beyond the upper limits of normality. Separation of the clear from the pigmented cells of the pars plana, and separation of the clear and pigmented cells from the basement membrane, and the frequent presence of retinal folds were thought to be artefacts attributable to differential shrinkage of the coats of the eye, indicating only that adhesion between the layers of the optic cup is poorly developed in the premature eye. No evidence of a nucleus of retrolental fibroplasia was found apart from the incomplete retinal vasculature that is characteristic of prematurity.

Oxygen and Retrolental Fibroplasia: A Seven Year Survey. R. M. Forrester, E. Jefferson and W. J. Naunton. Lancet 2:258-260 (Aug. 7) 1954 [London, England].

The relationship between the use of high oxygen concentrations in the treatment of premature babies and the development of retrolental fibroplasia has been widely discussed. This paper records the disappearance of the disease from two nurseries for premature infants in Manchester and relates this change to restriction in the use of oxygen. During the past seven years 83 cases of retrolental fibroplasia occurred in these two nurseries. Thirty-six of these children have permanent changes, and 21 are blind. Since October, 1951, the amount of oxygen used for each infant has been severely restricted. Since November, 1951, there has been no case of blindness due to retrolental fibroplasia. The incidence of incomplete and temporary changes has been similarly reduced. These observations confirm the important role that oxygen plays in transforming a rare sporadic disease into a major cause of blindness. The authors are satisfied that the elimination of the disease by restriction in the use of oxygen can be achieved without detriment to the survival rate.

OTOLARYNGOLOGY

Ménière's Disease: Simplified Surgical Management. H. M. Goodyear. Ann. Otol. Rhin. & Laryng. 63:491-497 (June) 1954 [St. Louis].

Goodyear feels that surgical treatment of Ménière's disease is justified only in those patients who do not respond to medical treatment with nicotinic acid, Bellergal (a proprietary preparation of belladonna alkaloids [Bellafolin] combined with ergotamine tartrate and phenobarbital sodium), thiamine chloride, small doses of potassium iodide, salt-free diet, cessation of smoking, omission of alcohol, and avoidance of tension and excitement. He describes his own simple method of destroying the endolymphatic membrane of the utricle and establishing a communication between the endolymph and perilymph. He emphasizes the use of the Hudson brace and bit and the Adson bur in the surgical approach to the labyrinth. The hypodermic administration of 50 mg. of dimenhydrinate (Dramamine) three times a day is helpful after the operation. Since 1943 the author has used this operation in 22 patients, in all of whom there has been complete loss of hearing and of vestibular function. For some months after the operation, however, there may be some disturbance in balance, especially when the patient suddenly looks upward.

Lethal Granuloma of the Midline Facial Tissues, Granuloma Gangraenescens. R. L. Breckenridge, A. J. Wagers and W. H Baltzell. Ann. Otol. Rhin. & Laryng. 63:278-295 (June) 1954 [St. Louis].

Infiltration of the skin of the face, nose, or palate gradually developed in the five patients reported by the authors. As the process advanced it involved the deeper tissues, produced necrosis, and gave rise to deep defects in the soft tissues and the corresponding parts of the skeleton. Two of the patients died in cachexia; in the other patients the lesions continue to be destructive. The cases are similar to those earlier described under such terms as "lethal granuloma of the midline facial tissues," "granuloma gangraenescens," "malignant granuloma," and "necrotic osteomyelitis of the face." A leading dermatologist diagnosed the first of the described cases as mycosis fungoides, but none of the other cases suggested this diagnosis. In the second case systemic histoplasmosis was suspected, but biopsies and cultures failed to reveal Histoplasma capsulatum. The three surviving patients are being periodically examined and subjected to laboratory studies, biopsies, cultures, and therapeutic tests in the hope that more may be learned about this mysterious disease. So far it has not been decided whether the disease is infectious or neoplastic. Animal inoculations and cultures for bacteria, yeasts, fungi, and viruses have failed to establish a causal organism. It has been suggested that the disease is a form of periarteritis nodosa involving especially the nose. It has also been pointed out that the disease resembles gangosa, both conditions being characterized by a destructive granuloma of the nose and facial tissues. The two diseases differ only in prognosis and geographic distribution, gangosa being rarely fatal and occurring only in the West Indies, South Pacific, West Africa, and the Belgian Congo. Some suspect granuloma of the midline facial tissues of being cancerous, but Ewing found that the lesions greatly resembled syphilis. Williams suggested that it might be the result of hyperimmunity. The disease develops in three stages. The prodromal stage is characterized by intermittent nasal obstruction associated with postpharyngeal discharge and a watery or serosanguineous rhinorrhea. Occasionally the disease is initiated by a superficial ulcer in the nasal region, but usually the second stage of the disease is characterized by a shallow ulcer on the nasal septum, inferior concha, or floor of the nose or palate. The ulcer is covered by a crust, under which there is a granular surface. There is a sanguinopurulent discharge and a fetid odor. The palatal, nasal, and malar bones undergo necrosis and sequestration. Abscesses may develop in the soft tissues. The third or terminal stage is characterized by extreme mutilation of the face and by the fetid odor of putrefaction. Purulent ischarge may exude from between the swollen eyelids. The pharynx and larynx may show extensive necrosis. The disease ends to have periods of quiescence, but recovery is rare. The majority of the patients die from four to six years after onset of the disease. The use of heavy metals, antibiotics, or surgical xcision have generally failed to stop the progression of the disease. Radium or roentgen therapy, however, have resulted in healing of the ulcer in some cases, and recently cortisone nd corticotropin have produced some encouraging results. The prognosis is usually grave.

THERAPEUTICS

Effect of Bee Venom in the So-Called Collagen Diseases. J. Lhermitte, H. Porsin and C. Bétourné. Presse méd. 62:1017-1019 (July 3) 1954 (In French) [Paris, France].

Although the beneficial effect of Hymenoptera venom has been recognized for centuries, its method of action is still not known. Basing their statement on clinical, anatomic, and experimental data, the authors point out that repeated injection of purified venom from bees produces a spectacular effect on the so-called collagen diseases, as shown in their patients with progressive polyarthritis, four of whom are reported on. The venom acts as a factor of reflected tachyphylaxis (immunization) and of diffusion. It is a neurolytic or myelolytic agent. Animal experiments have shown that purified venom, when it comes in contact with nerve centers or peripheries, causes dissolution of myelin sheaths and disintegration of neuron cytoplasm. Used as a therapeutic agent its action is less violent, but the venom works on the nerve plexuses that are spread so abundantly throughout the collagen tissue and on the cerebrospinal centers, which often present disturbances or even lesions in the course of chronic progressive polyarthritis.

Fatal Infections Complicating Antibiotic Therapy. A. W. Squires and E. L. Foote. J. Maine M. A. 45:171-178 (July) 1954 [Portland, Maine].

Squires and Foote show that the constantly increasing use of antibiotic agents is being paralleled by a constantly increasing incidence of syndromes that obviously are of infectious character and the most striking characteristics of which are the rather vague onset, the rapid and fulminating course, and the high incidence of fatal outcome. The authors comment on the course of three patients, all three of whom died. The last patient had atrophic cirrhosis upon which were superimposed necrotizing hepatitis and microccocic (staphylococcic) septicemia, with multiple pyemic abscesses. Death was attributable to heart failure that resulted from both the myocardial involvement and the general toxemia. The initial lesion in each of the first two patients was one of an acute bacterial enteritis. Secondarily, acute nephrosis ensued and terminated in renal failure. Cerebral and pulmonary edema and pleural effusion resulted from the renal "shut-down." The clinical course was marked by hyperpyrexia, hypotension, circulatory collapse, and renal failure. The evidence points to an overgrowth of toxin-forming bacteria within the intestinal tract as the initiating factor. Absorption of toxin into the blood stream and its subsequent concentration and resorption in the convoluted renal tubules, especially in their proximal portions, where concentration of the toxin was maximal, led to the cloudy swelling and hydropic degeneration. This damage, in turn, impeded normal resorption of electrolytes, caused retention of nitrogenous materials, and, possibly, stimulated release of antidiuretic hormones. The vasomotor collapse is ascribable to the action of the toxin in impairing muscle functions of both the arterioles and the myocardium. These cases simulated, in both clinical and pathological aspects, food poisoning caused by micrococci (staphylococci). Terminally, anoxemia secondary to circulatory collapse aggravated both the renal and the circulatory damage. Extremely serious infectious disorders occur as complications of antibiotic treatment. The following facts must now be regarded as medical axioms: 1. Many infecting organisms are not suppressed by antibiotic agents. 2. Many organisms rapidly acquire the ability to resist and survive the effects of antibiotics, and the incidence of such resistance tends to increase from year to year. 3. Ordinarily the administration of antibiotic agents is unwise and unjustified unless the pathogenic organism has been defined and been determined. 4. The more seriously ill the patient the more urgently the identification of the responsible organism is needed. 5. Premature, indiscriminate use of antibiotics usually makes it impossible later to secure the bacteriological evidence upon which successful antibiotic treatment depends. 6. The continuation of antibiotic therapy after one-week of adequate dosage will frequently make the patient worse than he was originally, and now and again there will be a fatality.

Evaluation of Phenylbutazone (Butazolidin) in Treatment of Rheumatoid Spondylitis: Report of 50 Cases. E. C. Toone Jr. and W. R. Irby. Ann. Int. Med. 41:70-78 (July) 1954 [Lancaster, Pa.].

The new synthetic "antirheumatic" agent, phenylbutazone, commercially known as Butazolidin, seems to be most effective in acute gouty arthritis. It has also been found to afford relief of symptoms in rheumatoid spondylitis, rheumatoid arthritis, and many periarticular disorders. Fifty patients were selected from the McGuire Veterans Hospital and from the hospitals and outpatient department of the Medical College of Virginia. Each patient showed roentgenographic changes of rheumatoid spondylitis in the sacroiliac joints or spine. The period of observation for individual patients varied from 2 to 12 months. Twenty-seven patients showed major improvement, eight showed minor improvement, and 15 were considered failures either because of no response to treatment or because of toxic manifestations. None of the patients had a complete remission. Toxic reactions occurred in 17 patients, which in three necessitated discontinuing administration of the drug. The average dose schedule was 600 mg. daily for three days, and a daily maintenance dose of from 100 to 400 mg. In general, patients who had previously responded to x-ray treatment responded satisfactorily to phenylbutazone. A few patients who had failed to respond to x-ray were benefited by this drug, and, conversely, several patients failing to improve on phenylbutazone were controlled with x-ray therapy. There were nine patients in this series in whom phenylbutazone treatment was considered to have certain advantages over x-ray therapy for reasons other than the primary disease. As is the case in roentgen therapy, phenylbutazone's beneficial effect seems to lie in its ability to control the symptoms of the disease rather than to effect a cure. With few exceptions the drug had to be administered daily and continuously to be effective. Indications are that improvement, if maintained for two months, will continue. The early high dose schedule, up to 1,200 mg. a day, accounted for a number of the toxic or unfavorable reactions, and with a maximal initial dose schedule of 600 mg. daily and a maintenance dose level of from 100 to 400 mg., the number of toxic reactions has been reduced without impairment of the therapeutic results. The limitations of phenylbutazone are considerable. It has failed to cure or bring about a complete remission of the disease. In a number of instances no favorable therapeutic response occurred, and the toxic potentialities are high. Final evaluation of the drug will require a longer period of observation. At present it seems more an adjunct to than a replacement of x-ray therapy.

Basic Treatment of Arterial Hypertension with Extract of the Roots of Morinda Citrifolia (Cay-Nhau). Dang-Van-Ho. Presse méd. 62:1020-1021 (July 3) 1954 (In French) [Paris, France].

The author made use of Morinda citrifolia, a plant that grows abundantly in southern Viet-Nam, in the treatment of arterial hypertension. The roots of this plant, which is known as Cay-Nhau or Re-Nhau, have been used empirically by the natives, not only for hypertension, but as an antirheumatic or emetic.

Five patients are reported on; four of them had dramatically successful results, and one was greatly improved. The author has also treated other patients successfully. He stresses the fact that the extract must be combined with other therapeutic agents when there are complications of hypertension. It is an excellent diuretic, and is superior to orthosiphon, calcium chloride, or theobromine in the treatment of dropsy. In the author's opinion, it could probably be successfully combined with other hypotensive agents, such as methonium. Morinda citrifolia has been studied biochemically and pharmacologically, but its medical properties should be further looked into.

Treatment of Bacterial Pneumonia with Erythromycin: A Controlled Clinical Study. C. D. Gibson Jr., H. Nushan and D. N. Anderson. Ann. Int. Med. 41:112-117 (July) 1954 [Lancaster, Pa.].

The sulfonamides, penicillin, bacitracin, chlortetracycline, oxytetracycline, and chloramphenicol are all of proved clinical value in bacterial pneumonia. None has been proved more efficacious or in general less toxic than penicillin. Gibson and associates attempted to establish whether the therapeutic effect of erythromycin was equal to that of penicillin in the management of pneumonia. The therapeutic effects of procaine penicillin and erythromycin were compared in two random groups of patients who had bacterial pneumonia of moderate severity. In all, 21 patients were treated with penicillin and 24 with erythromycin. The response to therapy in the two groups was similar. No major toxic reactions to erythromycin were observed. The usefulness of erythromycin in fulminating cases remains to be investigated.

Use of a Hypotensive Alkaloid (Reserpine) Extracted from Rauwolfia Serpentina Benth: First Observations in Aged Patients. S. Ingegnieros. Gior. gerontol. 2:346-353 (June) 1954 (In Italian) [Florence, Italy].

The hypotensive and sedative effect of reserpine, an alkaloid extracted from Rauwolfia serpentina benth, was observed for four months in 32 patients between the ages of 57 and 82 years with hypertension. This was almost always associated with arteriosclerotic changes and sometimes myocardial and valvular involvement, coronary insufficiency, and cerebral impairment. Tablets of 0.5 mg. were used, and the dosage was gradually increased to the daily amount of 2 to 3 mg. given in divided doses at regular intervals. The hypotensive effect of the drug appeared after four or five days of therapy. There was an average drop of 54 mm. Hg in the systolic and 23 mm. Hg in the diastolic pressure. The sedative effect of the drug was marked and was observed also in the patients who were disturbed and restless. The good effects of reserpine were, however, only temporary: one week after discontinuance of the therapy the arterial pressure returned to the initial values. The therapy was resumed, but doses larger than the previous ones were needed in some patients to obtain the same effects. This may or may not suggest an eventual acquired tolerance to reserpine. Untoward effects were few, mild, and short-lasting. The commonest was bradycardia that appeared before the pressure dropped and was still present one to two weeks after the therapy was discontinued. Diuresis and azotemia were not influenced by the drug, and only one patient complained of diarrhea. The author attributes the absence of skin rash, nasal congestion, nausea, vomiting, and other side-effects that were reported by some authors, to the small doses and the purity of the product that was used for these patients. Reserpine is a valuable therapeutic agent in geriatrics.

A New Drug for Symptomatic Treatment of Myasthenia: A Dimethyl Carbamate of 3-Hydroxy-1-Methyl Pyridinium Bromide (Mestinon). S. Rigotti and E. Schergna. Gazz. med. ital. 113:141-145 (May) 1954 (In Italian) [Milan, Italy].

A comparative study of the effects of neostigmine and a dimethyl carbamate of 3-hydroxy-1-methyl pyridinium bromide (Mestinon) was made in 10 patients with myasthenia gravis. The new drug was given orally in an average daily dose of four 60 mg. tablets. The substitution of Mestinon for neostigmine and then the reverse did not cause any disturbance. In some patients, however, the neostigmine dosage had to be increased with respect to that used before Mestinon was given. Neostigmine caused noticeable side-effects in three patients, but no side-effects followed the administration of Mestinon. The therapeutic effects, as felt by the patients and evidenced by resumption of some of their activities that had been up to then impossible, were more pronounced with Mestinon. Like neostigmine, the new drug was less effective for the muscles innervated by the cranial nerves, especially by the oculomotor, than for the muscles of the extremities and the trunk. Its effectiveness for these muscles was always superior to that of neostigmine. The authors feel that Mestinon, because of the absence of side-effects, may become a valuable drug in the symptomatic treatment of myasthenia gravis. Further clinical trial of the preparation is needed.

RADIOLOGY

Systematic Radiological Examination of the Lungs in Groups of Children and Adults. R. Pannier. Belg. tijdschr. geneesk. 10: 761-789 (Aug. 15) 1954 (In Flemish) [Leuven, Belgium].

Pannier reports the results of radiological studies of the lungs carried out in a district in Belgium in schools, in factories or other industrial establishments, in social institutions such as homes for orphans and for the feeble-minded, in penal institutions, and in insane asylums. Of a total number of 41,806 persons in these establishments, 36,560 persons were subjected to roentgenoscopy of the chest. Suspicious cases were found in all groups ranging from 13.1 per thousand among school children to 89.1 per thousand in the insane asylums. Reexamination of the suspicious cases revealed that the morbidity figure for pulmonary tuberculosis for all groups combined was between six and seven per thousand, being much higher among the adults than among the children. The incidence of nontuberculous lesions was also much higher among adults than among children. After commenting on the cost and on other aspects of mass roentgenoscopy, the author states that he feels that the number of cases of pulmonary tuberculosis and of other pulmonary lesions that were detected justify this type of examination. In view of the greater yield of cases among adults than among children, greater efforts should be made to interest adults in submitting to these ambulatory radiological chest examinations.

Tuberculous Mastitis: Roentgen Study. R. Leborgne. Tórax 3:61-64 (March) 1954 (In Spanish) [Montevideo, Uruguay].

A clinical diagnosis of primary tuberculous mastitis without fistulas is difficult. The roentgen changes of the involved breast are of great diagnostic value, although they are not so pathognomonic as those of carcinoma of the breast. Roentgen study of the involved breast was made in 13 cases. The roentgen diagnosis was confirmed by histological study or by the positive results of inoculation of guinea pigs. The roentgenograms obtained were classified in three groups that corresponded to the nodular, the sclerosing, and the edematous forms of the disease. In the nodular form the nodules may be located in the subareolar region, deep in the body of the gland, or in the fatty tissue. A differential roentgen diagnosis between tuberculous cold abscess and cystic adenocarcinoma is difficult because the roentgen picture of both conditions is similar. The tuberculous nodules and cystic adenocarcinoma are opaque to transillumination. In the sclerosing form the roentgen picture is that of intense density of the whole external region of the gland, with the aspect of hyperplasia of the connective tissue. Roentgen examination of the canalicular system of the breast was made in some cases. It showed effraction of the galactophore ducts and ample passage of the opaque medium to the involved areas of the breast. The edematous form of tuberculous mastitis developed in patients with large adenopathies of the lateral axilla. The roentgenographic aspect of the edematous form of tuberculous mastitis is similar to that of edematous carcinoma of the breast. Objective clinical evidence of great differential diagnostic value is the degree of descent of the tuberculous breast, which is greatly marked in comparison with that in edematous carcinoma.

BOOK REVIEWS

The Administration of Physical Education for Schools and Colleges. By William Leonard Hughes, Ph.D., Sc.D., Professor and Director of Health, Physical and Recreation Education, Temple University, Philadelphia, and Esther French, Ph.D., Professor and Director, Department of Health and Physical Education for Women, Illinois State Normal University, Normal. Cloth. $4.50. Pp. 383 with 76 illustrations. A. S. Barnes & Company, 232 Madison Ave., New York 16, 1954.

This book is concerned with more than the management of an athletic program; it covers administration of the broad field of physical education, including appropriate physical activities for all students. The authors' thesis is that efficient administration is merely a means to an end. A scientific approach to the administration of physical education is essential if available funds are to be used to provide the finest possible program for all students. A refreshing feature of the volume is the rapidity with which it approaches its subject. One does not have to wade through pages of irrelevant material before getting down to the business of the book. Another point of special interest is the fine economy of words the authors have achieved without losing sight of important principles or neglecting essential details. The result is a clear, practical presentation that should be a helpful adjunct to teaching and an effective aid to learning.

Heart Disease and Industry, with Particular Reference to Workmen's Compensation Cases. By Meyer Texon, M.D. Forewords by Samuel A. Levine, M.D., and Hubert Winston Smith, LL.B., M.D. Cloth. $7.50. Pp. 324. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1954.

On the basis of a critical evaluation of recent medical literature and 100 workmen's compensation cases involving heart disease referred to him for consultation, the author concludes that "industrial incidents" and work conditions as described are not causally related to coronary thrombosis and that coronary thrombosis is an end-result in the natural course of atherosclerosis. This interesting study, clearly written and minutely documented, achieves its stated aims to present medical criteria for determining causal relationship between trauma and heart disease, to provide assistance to referees and medical boards by providing factual data helpful in reviewing controversial medical evidence and rendering opinions thereon, and to suggest a basis for modifying present laws to enable social benefits to continue without compromising scientific truth. If the clinical data in the 100 cases available to the author can be regarded as sufficient for sound scientific deduction, then this is a useful contribution to an increasingly complex medicolegal problem.

Hypertension and Nephritis. By Arthur M. Fishberg, M.D., Director of Medicine, Beth Israel Hospital, New York. Fifth edition. Cloth. $12.50. Pp. 986, with 49 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1954.

This edition appears 15 years after the fourth, during which time hypertension and nephritis have been intensely studied; hence, it has been extensively and judiciously rewritten. It remains, as before, an outstanding reference book for students, general practitioners, and internists. The chapter summaries concisely review the field and sometimes clarify the text. The exhaustive bibliography thoroughly establishes the historical development of the field. The style, unlike that of most reviews, is personal. This sustains interest but jeopardizes objectivity in the evaluation of some recent experimental data and new therapeutic approaches. The organization of the chapters makes several discussions repetitious. Books that are reedited after long periods are prone to include material that could advantageously have been dropped, condensed, or revised. This one is no exception. For example, the emphasis in hypertensive encephalopathy is placed on convulsions, which do not occur frequently in this condition; scant attention is given the use of hypotensive agents therapeutically or in differentiating encephalopathic convulsions from those incident to cerebrovascular arteriosclerosis. Again, it is difficult to concede that the nephrotic syndrome is a simple result of albumin loss. It is incorrect to include orthostatic proteinuria as one of Bright's diseases; the diseases Bright described were "attended by coagulable urine [and] some obvious derangement . . . in the kidney." The discussion of prerenal azotemia does not sufficiently bring out the sequence of renal vasoconstriction, oliguria, tubular necrosis, anuria, and acute renal failure, or the means of preventing this inexorable progression. The section on renal function is freshly written and well done; it would be more meaningful if supplemented by diagrams illustrating the discrete nephron functions. The chapter on function tests passes over the significance of the urinary sediment, which Addis justifiably emphasized. This is an honest, scholarly book that has been and remains authoritative in this field.

Medical Uses of Cortisone Including Hydrocortisone and Corticotropin. Edited by Francis D. W. Lukens, M.D., Professor of Medicine, University of Pennsylvania School of Medicine, Philadelphia. Cloth. $7.50. Pp. 534, with 52 illustrations. Blakiston Company (division of Doubleday & Company, Inc.), 575 Madison Ave., New York 22, 1954.

The editor has attempted to compile the experiences of various medical specialists and to present an authoritative compendium of sound clinical judgment on the actions and uses of cortisone, hydrocortisone, and corticotropin. As in all multi-authored texts, differences of opinion inevitably creep into the contents. These apparent contradictions do not reduce the value of the volume but rather indicate areas where definite conclusions as to the worth of a particular kind of therapy are as yet undetermined. There is a great difference in the quality of the chapters, but on the whole a laudable effort has been made by the authors to achieve the original goals. The text is clinically oriented but also contains information on the basic experimental approaches.

Medicine and Science. Iago Galdston, M.D., editor. New York Academy of Medicine Lectures to Laity, no. XVI. Cloth. $3. Pp. 159, with illustrations. International Universities Press, Inc., 227 W. 13th St., New York 11, 1954.

For many years the New York Academy of Medicine has successfully conducted lectures on medicine and science for the laity. Outstanding authorities, who participate as speakers, have demonstrated over and over again that the most involved ideas and the most intricate information can be effectively presented to an intelligent audience. In this latest group of published lectures are contributions by men in the forefront of research, notably Hans Selye, who deals with the renaissance in endocrinology, and Norbert Wiener, the originator of cybernetics, who discusses technological advances, social organization, and individual well-being. Discussions on the relation of animal psychology to psychiatry, emotions and bodily disease, the quest for antibiotics, and the story of the mass production of antibiotics are also included. This book is recommended.

Hormones, Health, and Happiness: Glands and Personality. By Warren Henry Orr, M.D. Cloth. $4.50. Pp. 322, with illustrations. The Macmillan Company, 60 Fifth Ave., New York 11, 1954.

This book was written primarily for laymen. It would seem fitting when a physician writes didactically on a medical subject for the laity that he should present currently acceptable medical opinion in his discussion. It is unfortunate that in this text the author has chosen to present case studies and then advocate multiglandular therapy that many physicians and leaders in the field of endocrinology advise against. As an illustration, a 15-month-old child, with deficient bone development, whose physical description resembles that of a cretin, was given thyroid, parathyroid, calcium, vitamin D, and testosterone ointment. The author's theories on pathogenesis are [illegible] ired a [illegible] in some instances, are at variance with gene[illegible] opi[illegible]. The volume therefore leaves much to be [illegible] pr[illegible]tion of the facts concerning the infl[illegible] rm[illegible] personality.

These book reviews have been prepared by competent authorities but do not represent the opinions of any official bodies unless specifically so stated.

QUERIES AND MINOR NOTES

OWNERSHIP OF REMOVED ORGANS

TO THE EDITOR:—*I would like your opinion on the ownership of organs removed either at operation or at autopsy. Recently a man was operated on for nephrolithiasis. The specimen being unusual, we thought we could preserve it for our pathology museum. A friend of the patient claimed that it was the property not of the hospital but of the person from whom it was removed and that the hospital could not preserve it unless the owner permitted. We do not have any precedent on which we could be guided in the matter.* *M.D., India.*

ANSWER.—Although no laws or court decisions in respect to the legal status of surgically removed tissues have been found, such tissues are ordinarily regarded as the property of the person from whose body they were taken. If the patient does not claim the specimen when he leaves the hospital or as soon thereafter as he is able to do so, the hospital has the right to destroy it. Once the patient has abandoned the specimen in this manner the hospital has no obligation to preserve its identity. Thus, if the hospital were unable to identify and produce the specimen after it had been abandoned by its rightful owner, the owner would have no claim for damages. If the hospital had preserved the identity of the abandoned specimen and if the original owner had not specifically transferred his ownership to the hospital, he could rightfully demand its return.

TRENDS IN OBSTETRICS

TO THE EDITOR:—*Is it good medical practice: (1) to use oxytocin (Pitocin) or a similar drug in a liter of solution for intravenous use in routine inductions and expediting labor, that is, to keep the solution running during the first and much of the second stages, and (2) to do almost routine low forceps deliveries?*

M.D., Missouri.

ANSWER.—It is not good practice to use oxytocin infusions routinely to induce all labors. Some clinics are routinely rupturing membranes at term when the cervix is ripe and the head is in the pelvis in good position, with no complications present. Only time will tell whether this is justified. Many clinics use routine outlet forceps (not low forceps) and claim, with statistical justification, no added risk connected to the procedure. When the above procedures are used as an aid in obstetrics in isolated or special cases, they are a wonderful help, but this consultant can see no sense to some of the modern trends in obstetrics to hurry natural processes as a routine.

EXPOSURE TO MERCURIC VAPOR

TO THE EDITOR:—*What are the possible hazards to glassworkers when mercuric iodide is fused with hot glass and vapors are produced?* *M.D., Ohio.*

ANSWER.—Mercuric iodide poisoning is capable of causing systemic mercury poisoning and dermatitis. Although mercuric iodide sublimes at relatively low temperatures, it is unlikely that when the chemical is mixed in with molten glass any exposure will be limited to that compound. Any needed references are to mercury itself: "Industrial Hygiene and Toxicology" (Patty, F. A., editor, New York, Interscience Publishers, Inc., 1948). Extensive references to poisoning by mercuric iodide are unknown. In the present instance, for practical purposes two needs appear. 1. The concentration of mercury in the workroom atmosphere should be determined. Such determinations may be requested of Ohio's State Department of Health, Division of Industrial Hygiene. The maximum safe concentration is 0.1 mg. of mercury per cubic meter of air. 2. The workers exposed should be examined for oral inflammation, muscular tremors, and psychic irritability. One helpful preliminary device is to procure specimens of their handwriting. Any indication of tremors or inability to sustain the character of the first few words after a line or two should arouse suspicion. Any finding of the abovementioned symptoms warrants extensive examination including quantitative determination of mercury in the urine of the workers. Industrial poisoning with mercury in the United States is now rare especially from such compounds as the iodide.

MULTIPLE SCLEROSIS AND PREGNANCY

TO THE EDITOR:—*What is the regimen for a 33-year-old woman, five months pregnant, who has moderately severe multiple sclerosis?*

Joseph G. Springer, M.D., Bellefontaine, Ohio.

This inquiry was referred to two consultants, whose respective replies follow.—ED.

ANSWER.—The general impression is that pregnancy has no effect on multiple sclerosis, although cases have been reported in which this condition has been aggravated by pregnancy. However, the disease is characterized by exacerbations and remissions. There is no specific therapy. Treatment should be largely symptomatic and directed toward maintaining the nutritional state of the patient. Most patients have less pain than usual in labor. Spinal anesthesia is contraindicated.

ANSWER.—The role of pregnancy as a possible factor in the cause of multiple sclerosis and its exacerbations has been carefully studied and has been reviewed recently by Tillman (*Proc. A. Res. Nerv. & Ment. Dis.* 28:548, 1950) and by Sweeney (*Am. J. Obst. & Gynec.* 66:124, 1953). Both authors agreed that the management should be according to the obstetrical indications, as there is no evidence that pregnancy affects the ultimate course of the disease. Conversely, multiple sclerosis does not appear to have an adverse effect in pregnancy, but its complications may affect the obstetrical indications. In certain instances these may suggest interruption of pregnancy or cesarean section as more conservative than vaginal delivery.

INSULIN-RESISTANT DIABETICS

TO THE EDITOR:—*What is the mechanism and what happens to the very large doses of insulin in insulin-resistant diabetics, and also in persons who have undergone thyroidectomy?*

C. D. J. Generales, M.D., New York.

ANSWER.—Resistance or insensitiveness to insulin in diabetic patients may be present in a wide variety of conditions, including acidosis, infections, and hemochromatosis. Hyperactivity of the glands producing insulin antagonists—the pituitary, adrenals, or thyroid—may be associated with insulin resistance presumably because of the opposing action of the contrainsulin hormones. In some patients resistance to insulin may be accompanied by evidences of allergy to this substance. However, in a considerable number of cases, no cause can be demonstrated by the usual clinical studies. More detailed investigation has shown that, in certain patients requiring extraordinarily large doses of insulin, precipitins or insulin-neutralizing antibodies are present. In such cases probably the insulin is in large measure bound and its effect neutralized so that unusually large amounts must be given to obtain the desired effect. Evidence is lacking to indicate that insulin is excreted in the urine to a significant degree. In a diabetic with hyperthyroidism, one expects the insulin requirement to fall rather than rise following thyroidectomy. Among 11 patients with coexisting diabetes and myxedema reported by Joslin, Root, White, and Marble (Treatment of Diabetes Mellitus, ed. 9, Philadelphia, Lea & Febiger, 1952, p. 632), there was no case of insulin resistance and the insulin requirements were not unusual.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.